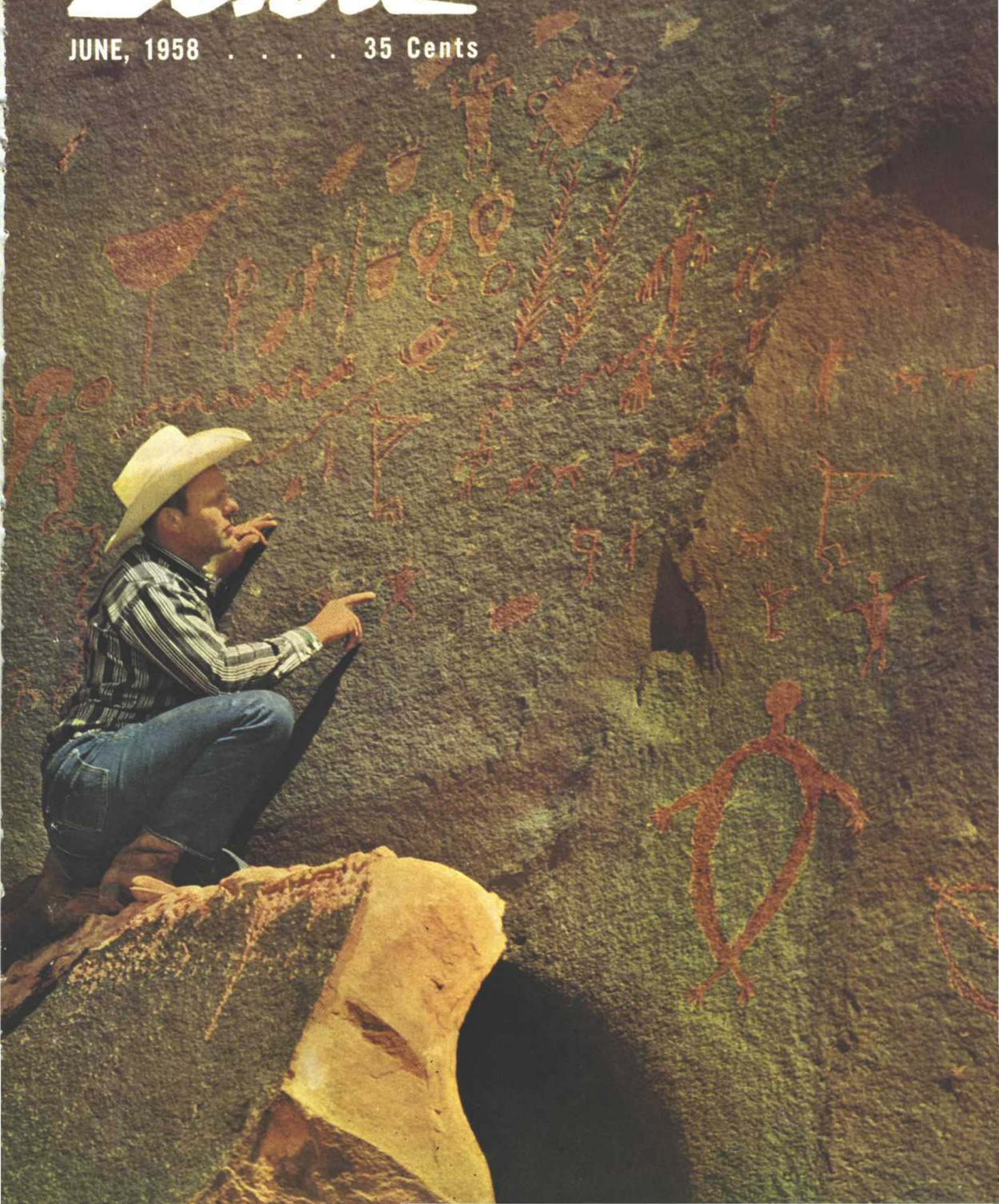
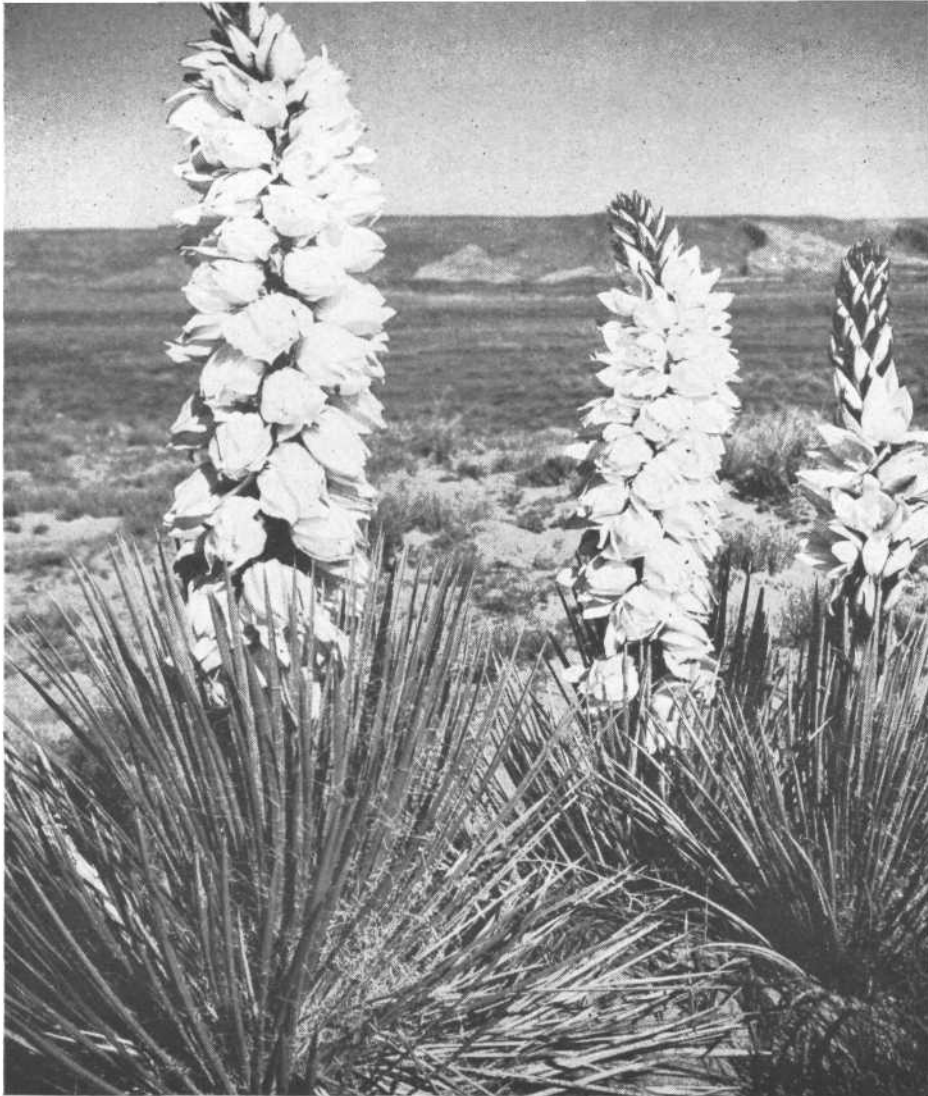


Desert

JUNE, 1958 35 Cents





Yuccas in Bloom

Among the most gorgeous of all Desert Southwest blossoms are those of the fleshy-fruited yucca (*yucca baccata*). This month's first prize photograph was taken in Navajoland near Kayenta, Arizona, by Nell Murbarger of Costa Mesa, California. At one time the yucca was very important to the Indians. The green pods were eaten either roasted or raw; soap was made from the roots; and the leaves were used for weaving baskets and sandals. Camera data: Rolleicord Camera; Eastman Plus-X film; 1/125th second at f. 11; K-2 filter.

Pictures of the Month

Sand and Skull

Fran Birdwell of Dallas, Texas, wins second award with this picture of a bleached cow skull casting its shadow across the arid sands. Camera data: Century Graphic Camera; Super XX film; 1/100 second at f. 22.



DESERT CALENDAR

- May 31-June 1—Fiesta de San Felipe de Neri, Albuquerque.
- June 1—Lincoln County Homecoming Day, Caliente, Nevada.
- June 1—Sheriff's Posse Rodeo, Prescott, Arizona.
- June 1-22 — Southwest Photography Exhibit, Museum of Northern Arizona, Flagstaff.
- June 6-8—Pecos Valley Horse Show, Roswell, New Mexico.
- June 7-8—Hesperia Days, Victorville, California.
- June 8—Parade, Kaysville, Utah.
- June 8—Tour to the Grave of Eugene Manlove Rhodes, Alamogordo, New Mexico.
- June 8—Corpus Christi Sunday Processions, Santa Fe, Taos and Ranchos de Taos, New Mexico.
- June 12 — La Loma Fiesta of St. Anthony, Evening Procession, Taos, New Mexico.
- June 12-14 — Pony Express Race Meet, Ute Indian Ceremonials, Teenage Rodeo, Vernal, Utah.
- June 12-15 — 41st Annual Cherry Festival, Beaumont, California.
- June 13—San Antonio de Padua Corn Dances, Taos and Sandia Pueblos, New Mexico.
- June 13—Flora Dell Flower Show, Bountiful, Utah.
- June 13-14—60th Anniversary Celebration, Home Show and Rodeo, Alamogordo, New Mexico.
- June 14-15 — Carson Valley Days, Gardnerville, Nevada.
- June 15 — Canyon Country River Marathon Power Boat Race, from Green River to Moab, Utah.
- June 15 — Kamas Valley Livestock Show and Parade, Park City, Utah.
- June 15 and 22—Procession of La Conquistadora, Santa Fe.
- June 20-21—3rd Annual Pages of the Past, Tombstone, Arizona.
- June 20-22 — 11th Annual State Championship High School Rodeo, Santa Rosa, New Mexico.
- June 20-22—National Turtle Races, Joshua Tree, California.
- June 23-July 4—8th Annual Southwest Writers' Workshop, Arizona State College, Flagstaff.
- June 24—Corn Dances, Taos, Acoma and San Juan Pueblos, N. M.
- June 26—Old Timers Day, Albuquerque.
- June 27 — Amateur Rodeo, Vernal, Utah.
- June 27-28—Rodeo, Hemet, Calif.
- June 27-29—Roundup, Lehi, Utah.
- June 27-29—8th Annual Junior Rodeo, Globe, Arizona.
- June 28-29—Indian Capital Rodeo, Gallup, New Mexico.
- June 28-29 — Silver State Stampede, Elko, Nevada.



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LIFE ON THE DESERT

First Day in the White Man's School

Here is the story of a Hopi girl's introduction to a formal education which led to a 31-year teaching career. To Elizabeth White's mother, the white man's school was a terrifying thing. There her child would embark on a new way of life from which there would be no turning back.

By ELIZABETH WHITE

HAVING RETIRED after 31 years of teaching the children of my Hopi tribesmen and neighboring Navajos, I often picture the faces of the beginners—some excited and sparkling with interest, others tearful and frightened. Then, invariably, my mind goes back to my own first day at school.

Until I was of school age there were no classrooms in our part of the Hopi Reservation. We played in the village streets of Oraibi, helped our parents, and followed the gentle Hopi pattern toward maturity.

Then, the abrupt change came. A

*Hopi girl and her baby sister.
Photo by Frashers, Pomona.*



day school was built about a mile below our mesa.

I was giving my baby sister a ride on my back beneath my blanket shawl, when my mother called me. Her voice was filled with fear.

"Hide behind that roll of bedding, *Polingaysi*," she said. "The white man and the Indian police are coming. They are catching little children for the school down there."

I handed my little sister to her, and hid under the blankets. She threw an extra sheep pelt over me.

When the men came to our door, Mother told them she had no children of school age except my brother, who was ill.

They went away, but I was alert after that. The instant I saw them coming, I hid.

But, soon I discovered that I was practically the only child of my age group in the village during school hours. I asked my friends about school. Their reports were good.

"They will give you a dress like this," they said, showing me the striped dress made of ticking. "It feels good. It is not as heavy as our Hopi dresses, but it is warm enough."

I wanted to try it on, so we ran behind the house and exchanged costumes. That was my first step toward adopting the white man's ways.

The very next day I went to the edge of the mesa and looked down at the school. I could hear the children laughing during recess. Finally, I walked down the trail toward the school and hid behind a rock.

One of my friends saw me and came running over. She took my hand and led me to the schoolhouse.

For the first time I saw the red-faced fat man who was the superintendent. He said something to one of



the older Hopi girls. She led me into another room and gave me a bath in a big tub, then put one of the ticking dresses on me.

At noon I stood in line with the others at the kitchen. We were given a tin cup full of water, a round hard-tack cracker, and tin saucer full of syrup. That was our lunch.

After the play hour, we lined up and were counted. The fat man pointed to me and said something to the teacher, another white man. He talked to me, but I could not understand him.

The teacher led me to a seat beside two other girls, and gave me a pencil and piece of paper.

When the teacher turned his back, my seatmate whispered: "He will make marks on the blackboard and we must copy the marks many times."

I copied the marks as best I could, with no idea that the three marks spelled "cat."

I had been so interested and excited that I had no thought of the offense I had committed until I saw my mother's face after school.

"Who took you off to school?" she asked. "The white man has not been in the village all day."

Standing before her in my new white man's dress, I hung my head.

"I went by myself," I said in a meek low voice.

She was very grieved. "Now, there is no turning back for you," she said.

She spoke the truth. There was no turning back. I went forward into the teaching profession, and during my long and satisfying career I tried to make up for some of the early mistakes of the government teachers.

Looking at the faces of the beginners in my classrooms, I could be understanding and sympathetic, because of my own first day at school.



Seven Troughs, Nevada, in 1908. Photo by Ewing Smoot.

The Seven Troughs Bonanza...

Here today — gone tomorrow. That was the story of the four great mining camps of the Seven Troughs district, and especially of Mazuma which was the tragic victim of a flash flood.

By NELL MURBARGER
Map by Norton Allen

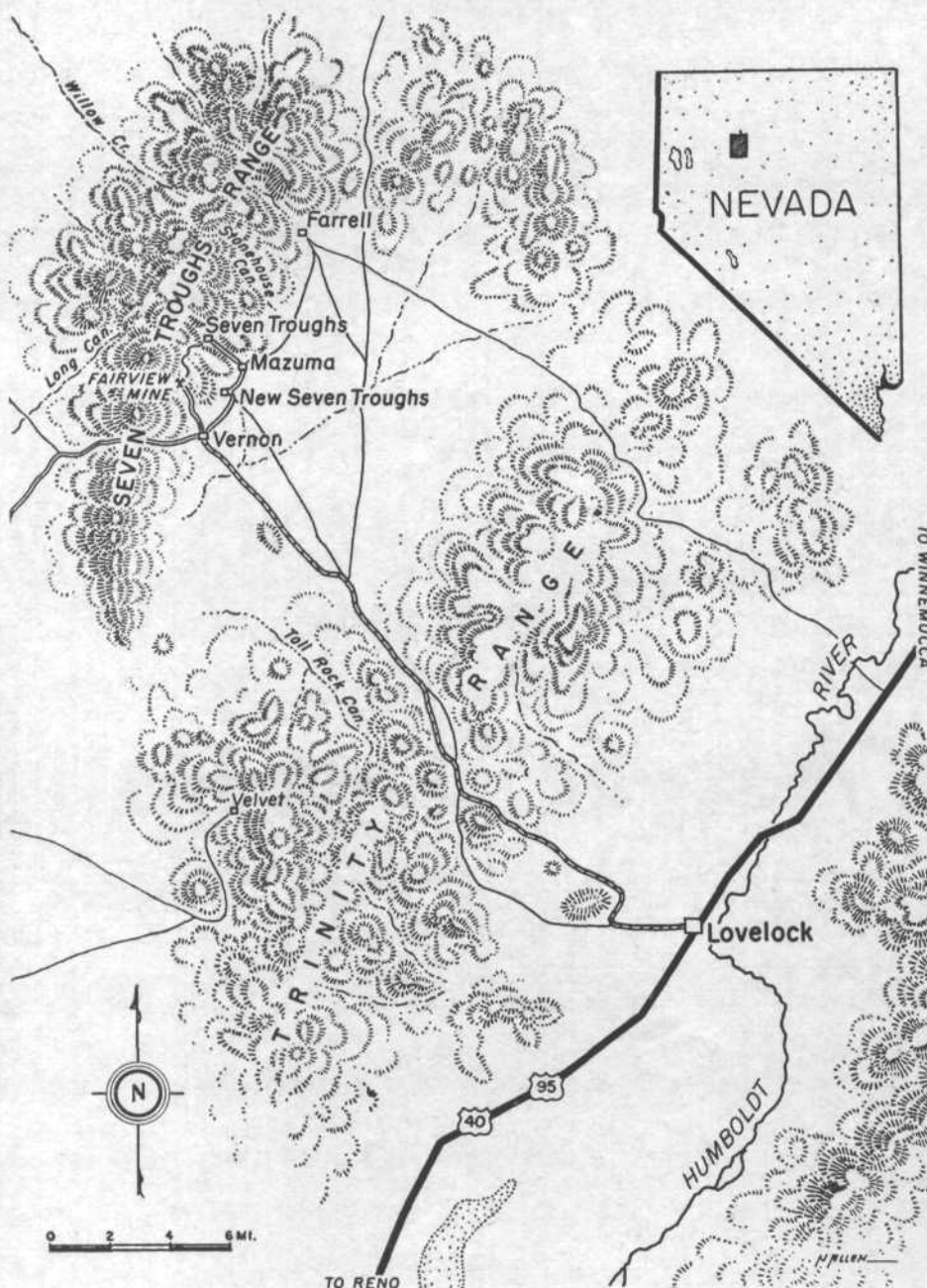
DURING THE first decade of this century, mining journals were crammed with news of Nevada. From a dozen camps came tales of incredible riches, and of even more spectacular treasure awaiting the next round of shots. Tonopah, Goldfield, Rhyolite, Hornsilver, Rawhide, National and Fairview gleamed like the aurora borealis on a cold night—and between the Stone House Range and the Trinity Mountains lay the four equally brilliant camps of the Seven Troughs District.

Vernon, on the south, and Farrell, only eight miles distant near the mining district's north boundary, flanked the towns of Seven Troughs and Mazuma. Sheep had ranged this vicinity for many years, and it was a cluster of livestock watering troughs around a spring that gave name to the new mining district, to one of its towns, and to the canyon in which that town and Mazuma were located.

During the first two days of work on a claim near Seven Troughs, over \$3600 in ore was taken from a hole only 10 feet deep, reported the *Tono-*

Mazuma's vulnerable position at the mouth of Seven Troughs Canyon led to its destruction by flash floods in 1912. Photo by Lee Jellum, loaned by Mabel Purdy.





pah Bonanza on January 19, 1907. This made a great story until December of that year when ore worth a dollar a pound was found in the Wild Horse Mine—eclipsed, in turn, by two-dollar-a-pound rock at the Little Hero tunnel northwest of Farrell!

But these stories dwindled to mediocrity on March 7, 1908, when the *Seven Troughs Miner* reported that the Kindergarten Mine had hit an ore shoot running \$100,000 in gold to each ton of rock.

On October 3, of that year, the *Seven Troughs District News* revealed that the Wihuja Company, operating the Stoker Lease, had tapped ore assaying \$125,000 a ton! When the Wihuja began storing its unmilled ore in the vault of the Vernon bank for safekeeping, the ultimate had been

reached. Even the state which had cut her teeth on the fabulous Comstock and grown fat on the "jewelry rock" of Goldfield, conceded that placing raw ore in a bank vault was big news—and Seven Troughs boomed!

No one knows who first found gold or silver in these hills, nor the year of that discovery. Although prospectors were ranging over this vicinity in the 1860s, no special excitement attended these initial efforts, and no camps were established. Likely the first important strike was made by W. A. Stautts and Jack Bishop in the late autumn of 1905. Other outstanding discoveries soon followed. In June, 1906, Johnny Mackedon and Billy Kavanaugh located a group of claims purchased by L. A. Friedman for \$50,000. This ground became the great Fairview

Mine. Another pioneer mine—the rich Kindergarten—was located by Tommy Owens, Joe Therien and Frank Crumpacker, who sold the claims to Friedman for \$75,000. Where Friedman acquired \$125,000 to buy the two mines is a mystery, for Lovelock old-timers remember him as a sewing machine agent. Everyone agrees, however, that he was a "sharp operator."

With four towns founded and nearly 500 men employed in local mines and mills, the district settled down to a steady and orderly growth. Building lots in Vernon, which had sold for \$75 in the fall of 1906, were bringing \$1500 the following summer. Each of the four towns had its own post office, and both Vernon and Mazuma had banks. The *Vernon Miner*, published by J. R. Hunter, made its bow on January 4, 1907. Six months later, Howard W. Cherry launched his *Vernon Review*. Then came the *Seven Troughs Miner*, edited by Roy D. Harris; and in September, 1908, the *Seven Troughs District News*, published at Mazuma by Howard N. Riddle.

By this time the district also had two public schools, about 30 stores, a half dozen real estate and brokerage offices and about that many lodging houses. The local miners' union had a membership of 200, and wages ranged from \$4 a day for muckers to \$5 for engineers and timbermen.

Baseball teams of Mazuma and Seven Troughs played each other and Lovelock, and Mazuma's gay blades supported a lively athletic club which collected a purse of \$100,000 as a bid for the Jeffries-Johnson championship boxing match. Vernon's smartly-uniformed brass band played for ball games, parades, drilling contests and civic functions, and the Seven Troughs Minstrels were considered tops in entertainment—their performances at the Miners' Union hall in Mazuma drawing heavy attendance from miles around.

Holidays were roundly observed, each Fourth of July finding residents of the district gathered at Mazuma for patriotic oratory and song, foot and horse races, tug of war and ladies' nail-driving contests, boys' pie-eating bouts, and competition in hardrock drilling and mucking. Boxing matches, dancing and the firing of giant powder brought such events to thunderous conclusions.

Labor Day celebrations were held at Seven Troughs, and followed the same general pattern marking July Fourth. One notable exception was the barbeque and drilling contest which featured the 1908 Labor Day observance. The affair took place at Friedman's Kindergarten Mine, where hun-

dreds of persons—one newspaper reported nearly 5000 — were served a barbecue dinner for which chefs had cooked two fat beeves, gallons of beans, and a barrel of coffee, and local bakeries had produced 400 loaves of bread.

After gorging themselves to repletion, contenders squared off for the hardrock drilling contest in which one man of a team held a piece of regulation drill steel and gave it quarter turns while his partner hammered the steel with quick sharp blows. Winning team was the one which, after 15 minutes, drilled deepest into a block of granite.

On this memorable Labor Day, the Vernon team, composed of Drillers Henderson and Nomes, sank their steel to the depth of 35-1/6 inches—an achievement that came close to matching the world's record. Then came the Seven Troughs boys, Ray and Martin, and after their steel had dug

into the granite for 15 minutes and the hole measured, they had beaten the Vernon team by seven-sixteenths of an inch, thereby winning the first prize money of \$250.

Challenging the winners to a return match the following day, Henderson and Nomes drilled to a depth of 36 7/8 inches — thereby claiming the local title as well as a side bet of \$200.

Another contest that evoked an unusual amount of interest was the automobile road race.

In the early months of the Seven Troughs boom, all freight consigned to the new camps was hauled from the railroad at Lovelock in wagons drawn by heavy draft animals, while passenger traffic and the mails were shuttled over the road in four-horse stagecoaches. The 30-mile trip from Lovelock was made with one change of animals at Halfway House—a small station at a good spring of water on

the west slope of the Trinities. Stages required about five hours to cover the distance, and wagons even longer.

Before the Seven Troughs strike was a year old, automobiles appeared on the scene. Although low in horsepower, they were well-suited for the bad roads and inexperienced drivers of that day. High wheels provided adequate clearance, and solid rubber tires were invulnerable to sharp rocks and other hazards of the road.

By averaging better time than even the fastest horse-drawn stage, the gas buggies captured the mail contracts by 1907; and because they scared the daylight out of any draft or saddle animal they chanced to meet en route, a toll road exclusively for their use was built a short distance south of the main stage road.

Rivalry ran high, and in April, 1909, when 15 autos were in service on the Lovelock-Seven Troughs run, owners

Ed Green and Link Nickerson knew the Seven Troughs' camps in the boom days of 50 years ago. Photo by the author.



of the several competing lines agreed to a road race. In view of the deep sand and alkali dust along the way, it is incredible that Dick Keyworth's Packard completed the 30-mile course in only one hour and three minutes, Bert Bailey's Franklin crossed the finish line one minute later, and Stanley McIntosh's Schandt Roadwagon was 20 minutes behind.

Aside from occasional claim jumping, camps of the district were remarkably well behaved, recalls Ewing Smoot of Lovelock who located at Vernon in 1906 and remained in that vicinity until the boom subsided. Few men, according to Smoot, carried guns; there were few known toughs, and

rolled over the Seven Troughs Range nearly every day for a week past. Sometimes the clouds brought a light sprinkle of rain that spattered the hot rocks and sent little puffs of dust rising from streets and yards. More often, they brought only lightning and thunder and continued drouth, so no one at Seven Troughs paid much attention to the threatening sky.

Perhaps the first realization that this particular storm was different from the others came to Ellsworth Bennett, sitting in the office of Coalition Mining Company, when he glanced out the window and saw water roaring down Seven Troughs Canyon!

Thundering through the dry wash

under 20 feet of water—and by the third moment, the town vanished.

Through all that horror-ridden night, searchers probed mud-layered heaps of splintered wood, broken brick and glass; and through all those long hours, voices choked with grief and dwindling hope shouted into the darkness the names of missing loved ones.

Not until five days later was the last body located—seven miles down-canyon.

Nine persons were drowned, four of them children. The victims included the Postmistress who had lost her life trying to save the postoffice money, and Mike Whalen who died in a vain effort to save one of the children. Many others were seriously injured. The only business buildings in Mazuma that escaped destruction were Fred Preston's hotel and Bill Kromer's store.

If there was any thought of rebuilding Mazuma, it was forgotten after four more cloudbursts roared down the wash in the next 10 days.

Mazuma was through.

Seven Troughs and Vernon continued to operate for a few more years, but with the inevitable depreciation of ore and rising cost of operation, they gave up the struggle. Due to the great richness of the ore pockets, and the vast amount of highgrading that had taken place during the camps' best years, it is impossible to determine the full extent of production, but conservative estimates place it between \$3,000,000 and \$4,000,000 in gold, silver, copper and lead.

In addition to talking to several persons who had taken part in the Seven Troughs boom, I was especially fortunate in having placed at my disposal complete files of the area's newspapers—a treasury of information now owned by Paul Gardner, publisher of the *Lovelock Review-Miner*. After poring over these fascinating old journals, I felt as if I had known personally half the men and women who took part in that long-ago boom. But I still wanted to talk to Link Nickerson, the "Sage of Seven Troughs."

On each of three earlier visits, spread over a period of eight years, I had failed to find Link at home—he was always off in the hills working mine assessments. But, I was determined to locate him before writing the story of these camps.

Ed Green, who drove stage between Lovelock and Seven Troughs in the early part of the boom, rode with me to the old diggings, now reached by short branch roads leading off graded State Highway 48.

After a gradual 12-mile climb to the juniper-feathered crest of the Trinities, Ed pointed out the green seep



Stages that connected Vernon, Seven Troughs, Mazuma and Farrell with Lovelock. Photo loaned by Mabel Purdy.

only on rare occasions did violent death lay its hand on the camps.

But Death was not taking a holiday—it was conserving its main thrust for the tragic Third Act for which Mazuma would be the setting.

Of the district's four towns, Mazuma was the largest. In addition to stores, newspapers, bank and fraternal organizations, it had a well-equipped fire department, a Board of Trade, mining engineers, attorneys, brokerage houses, a bath house, and a good hotel. It also had several real estate promoters, and one of these, in 1908, was advertising: "Buy a lot in the East Addition to Mazuma and be Comfortable in Old Age. East Addition is Situated at the entrance to Seven Troughs Canyon, the Ideal Place to Live. Lots Reasonable in Price, Elegant in Location . . ."

Less than four years later the persons who read and answered that advertisement would have good reason to remember it.

Although the air was hot and a trifle sultry, Mazuma saw nothing unusual about the morning of July 18, 1912. Big white thunderheads had

with the speed of a cannon-ball express, the cloudburst flood deepened as the canyon narrowed and by the time it reached upper Mazuma, it was a furious gray wall with frothing crest riding high as the roof of a two-story building!

Nothing could withstand this terrible tide. Automobiles were rolled over like toys, cabins were sent whirling off their foundations, and stout store buildings were reduced to kindling wood. Postoffice patrons saw the flood coming in time to flee for their lives, but as Postmistress Maude Ruddell reached the street door she remembered the postoffice money, and whirled back to save it. She had barely re-entered the building when the liquid battering-ram crashed upon it, bursting its walls as easily as a man driving his fist through a sheet of tissue paper.

The flood roared on to annihilate the bank, the brokerage office, the hotel, stores, homes—and as quickly as it had come, it subsided. One moment the streets had been dust dry. The next moment they were buried



Freight wagons on Lovelock streets in 1907, ready to depart for Seven Troughs. Included in the cargo is a printing press and paper cutter for the "Seven Troughs Miner." Photo by Ed Green.

where Halfway House once stood. Then we dipped into a wide valley and climbed another long sunny slope to Vernon whose only remaining buildings are a few small cabins and the old concrete jail, complete with barred windows and doors.

"The hotel sat here," said Ed, indicating a plot of desert identical to the ground surrounding it. "Preston's General Store, and Trenchard and Carey's Hardware were on the flat, yonder; and the Northern Saloon stood near the head of that ravine. After the town died, I got permission to tear the saloon down for the lumber."

From Vernon, a steep narrow rutted road led up a canyon to the famous Fairview Mine. Later, we skirted the brown hills to the site of Seven Troughs where gray mine dumps spilled down both sides of the canyon. A few ghostly headframes stood guard over inactive mines, and near the end of the road three wooden cabins drowsed in the afternoon sun.

As we drove back down the canyon, bumping over rocks and ruts, and dodging giant sagebrushes that disputed our way, I reminded Ed that I wanted to get some pictures of Mazuma.

"You do?" said Ed, grinning. "Then, you'd better stop quick—we're right in the middle of it!"

It didn't seem possible that any town—even a cloudburst victim—could be so completely obliterated. If there was one fragment of wall, one cellar, or even one cement foundation remaining, I failed to find it.

Near the canyon's mouth we turned on a branch road that led south toward a clump of trees and some wooden buildings. A man, seated on the steps of the first cabin, regarded us quizzically as I halted the car in his front yard.

"You've hit it, this time," said Ed. "Here's the old boy, now!"

The man who came forward to greet us was thin and wiry, his eyes brimming with good humor, and his step still held the enthusiastic spring of youth.

Born in McMinnville, Oregon, Link Nickerson answered Adventure's call when in his teens. After a short period spent in the booming camps of Tonopah and Goldfield, he followed the rush to Seven Troughs in 1907—and here he has lived these 51 years! After the original town died, he moved to New Seven Troughs, a small camp that came into existence about 30 years ago when a tunnel was being driven into the mountain to connect with the original Fairview shaft. Also at New Seven Troughs stands a large \$200,000 cyaniding mill built in 1929. After operating only a few months the mill closed, and is now owned by a rancher who bought it several years ago for back taxes.

Link owns the little cabin in which he lives. From an old iron pipe near his front door pours an unfailing stream of clear cold spring water which supplies his domestic needs and runs on down the slope to water the cottonwoods in his front yard. A kerosene-

operated refrigerator preserves his perishables. About once a month he drives to Lovelock for groceries and his mail.

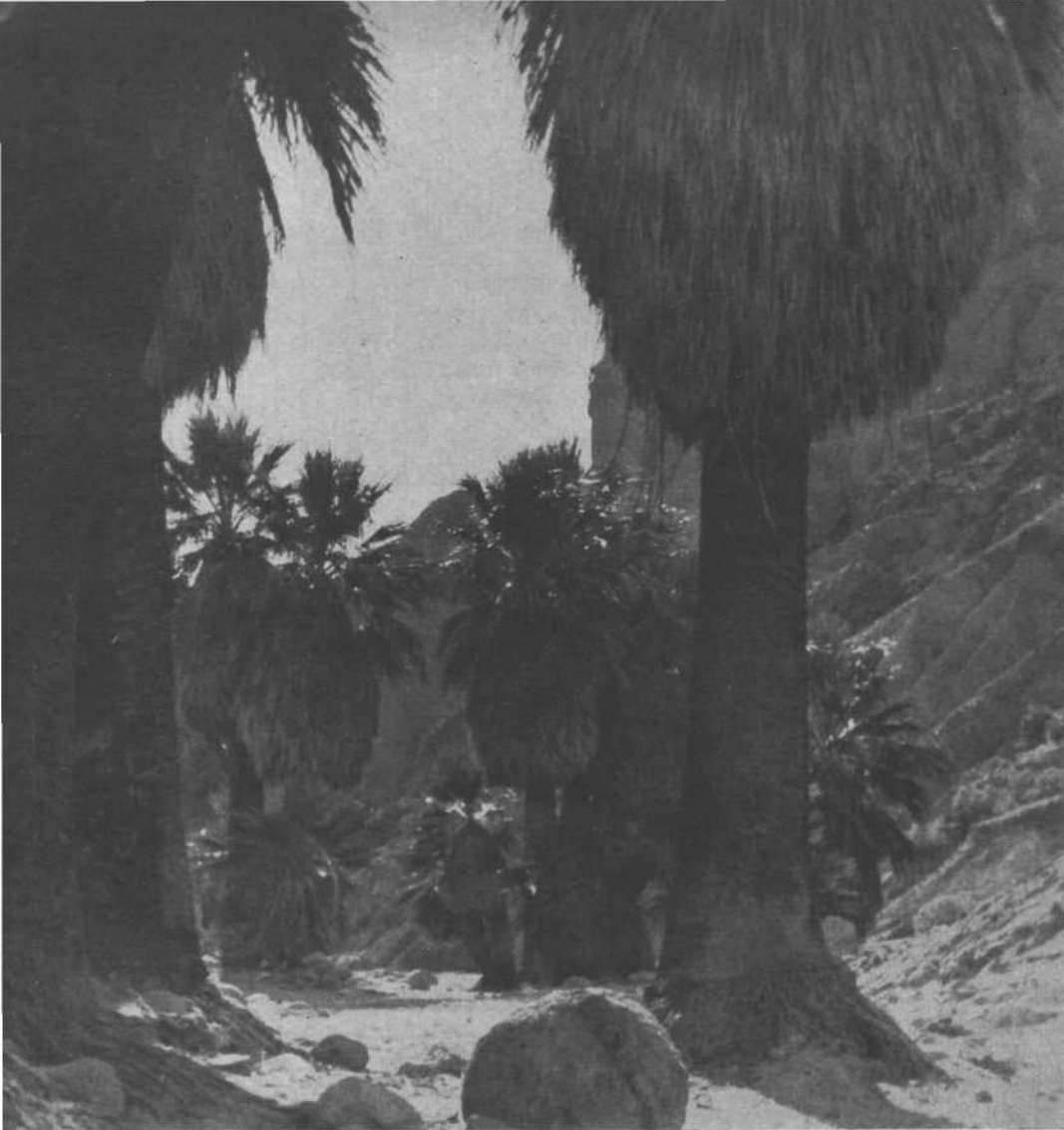
After Link had helped me with several details of local history, and Ed and I were about ready to leave, I looked out over the wide dry desert valley between the Seven Troughs Range and the Trinities.

"This is a strange place for an Oregon Webfoot to have lived for a half century," I remarked.

"Ain't it the truth," the desert man chuckled. "I'm not sure, but I suspect the webs dried up and fell off about 49 years ago!"

On our return, we halted at the little graveyard below New Seven Troughs. Its fence was lying prone, and the dozen rocky mounds it contained were barren of flowers or grass. On only four of the weary wooden markers could we decipher time-faded inscriptions. One headed the grave of Frank Reed, killed by a gambler; another marked the resting place of James R. Ratliff, died Jan. 5, 1909; and two wooden crosses identified the mounds of James, George and Ronald Keheo—little boys lost in the tragic flood of 1912.

Except for this old cemetery, three cabins and a few idle mines in Seven Troughs Canyon, the old jail at Vernon, and a few old newspapers and photographs, the four great boom towns of the Seven Troughs district have all but vanished from the earth.



MOJAVE INTERLUDE

By JAMES MADDEN MACINTYRE
Baker, California

How could the men who mapped the sand
Of desert valleys know
That other men would love a land
Where only salt-plants grow?

Perhaps because cool, starry night
Would end each burning day,
And mighty meteors in flight
Suggested God at play?

Or was it sunrise serenades
Of whispering winds that change
For tumbleweed to play charades
And bounce across the range?

There is no place where God's Sweet Face
So fills the earthly air,
In desert skies men open eyes
And find Him everywhere!

HERITAGE

By GRACE BARKER WILSON
Kirtland, New Mexico

This is our western heritage:
Beneath the turquoise tinted skies
The tangy smell of purple sage
At morning comes to tantalize.

Across the cactus studded sand
A hurrying coyote stalks his prey;
Two buzzards far above the land
Are circling in the blue skyway.

But none disturbs the quietness
Of countless ages that has spread
Across the desert's fathomless
Dominions uninhabited.

RANGE WIFE

By JEAN FENDLASON FITE
Albuquerque, New Mexico

Upon the range, a day is masculine
And wives of rugged men ride straight and strong.
They live with sun and dust and driving wind
And patience—for a desert day is long.

But they await the night. The mood will change.
A desert night is feminine and sweet.
Soft stars and cactus bloom and pungent sage
And moonlight in the place of desert heat.

Within this realm, a strong man drops the shell
That must surround him through the busy day
Becomes the tender man she knows so well
And for awhile, the world seems far away.

God and You

By TANYA SOUTH

Whichever way you try to live,
There's only God and you.
Whatever you may take or give,
It still is God and you.
However much you curse or pray,
Whatever you may do or say,
Or reap or sow, or charge or pay,
There's only God and you.

A Canyon of Palms

By LOUINA VAN NORMAN
Riverside, California

They lean together and whisper,
Where they have gathered by the stream.
They are ages old and shaggy,
And share an ancient dream
Of time before the white men
Disturbed their quiet days,
When only beasts and red men
Moved in the desert haze.

WAYSIDE WITNESS

By KATHERINE L. RAMSDELL
Tempe, Arizona

Crude things they were,
And fashioned hastily
Of things that lay at hand:
Two sticks of wood,
Or rusting iron wagon rims,
Banged straight
And crossed.
No one misunderstood.

The rutted trails
Are gone—their ridges pressed
In smooth and glistening
Macadam strands.
Now trim white crosses
Lonely vigil keep—
And still no passing soul
Misunderstands.

THESE SOMBER HILLS

By PAUL WILHELM
Thousand Palms, California

As palms that root in desert earth
And these uplifting lilac dunes
I stand amid these somber hills
That gave me birth, that nurtured me
With springs and soil and garden rows.
This flesh and blood within my veins
The same substance that made the hills;
This desert land my living flesh
And ever after it remains
Enduring more than flood and war.
This land is where I live and sing,
Watch sunset fall and taste the dawn,
Hoe corn at noon or climb a height
To trace a rainbow through the rain.
These somber hills a part of me,
My bed the sand, my roof the sky,
My symphony the blowing wind,
The piping frogs, the coyote's cry.

THE DESERT HOME

By FERNE CABOT DYSART
Wildorado, Texas

It's a little place
With a sun burned face
And the door is debonair
With a welcome mat
And a manner that
Invite you to enter there.

The windows beguile
With a beckoning smile
And the chimney puffs away
Like a calm, old man
Who in pipe dreams can
Relax at the end of day.

The roof slants down
Like a rakish crown
On the head of a vagabond.
And splendor lies
Where the distant skies
Meet the mountain range beyond.

There are mansions that stand
On restricted land
That possess not half the charms
Of the little place
In the close embrace
Of the desert's gentle arms.

Mystery Shrine on the Mojave Desert

Complete mystery surrounds the origin of a crude altar on which a Bible is framed in cement at a lonely spot in the Rademacher Hills north of Johannesburg, California. Here is the story — and perhaps among Desert Magazine readers are some who will know the answer.

By DOROTHY ROBERTSON

HIGH ON A RIDGE overlooking Searles Mesa in the Rademacher Hills above Indian Wells Valley, California, lies a glass-encased open Bible set like a gem in a vari-colored rock-studded frame. A piece of mesh wire with its center cut out to afford an unobstructed view of the text, covers the frame.

A friend, returning from a hike in the hills, first told us about this shrine. "There's a Bible framed in cement," he explained, "as if some one had wanted to build an altar there on a huge rock."

This was something we had not known about and we were interested. He gave explicit directions for reaching the place, and soon members of our family started in a jeep to find this mysterious Bible in the hills.

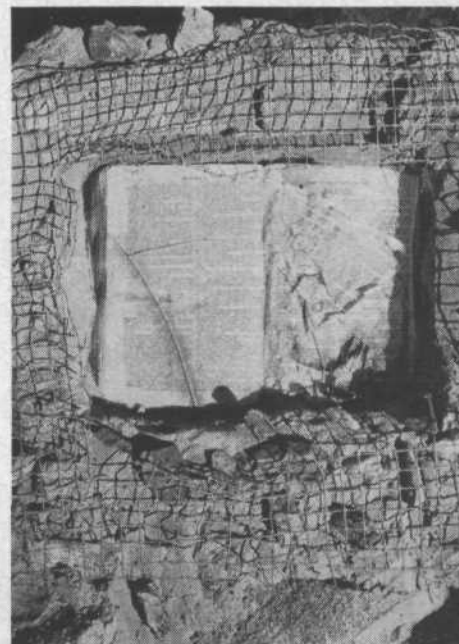
Although the glass pane covering the Bible is cracked, and the pages somewhat damaged, most of the text still is perfectly legible.

We have known about this shrine for over two years now, and still have not been able to discover a single clue as to how it came to be placed in these hills. I have heard versions of one story which, if true, could possibly lead to the answer. During the last war, a group of assertedly patriotic religionists supposedly came to this area, and, among other observances, daily held a flag-raising ritual. Unfortunately (for them), a Canadian plane is said to have picked up a radio beam from the illegal short-wave antenna concealed atop the flag pole.

But, is this spy story just another wild desert tale? Or is there, perhaps, some significance?

The Bible is opened to Hebrews, last page of Chapter 11, and the first page of Chapter 12. Some of the verses are highly thought-provoking:

"By faith he sojourned . . . as in a strange country . . ."



The Bible is opened to Hebrews, last page of Chapter 11, and the first page of Chapter 12.

" . . . and confessed they were strangers and pilgrims . . ."

" . . . they . . . declared plainly that they seek a country."

"When she (Rahab) had received the spies with peace."

"They wandered in deserts and in mountains and in the dens and caves of the earth."

Why were the pages of these specific chapters chosen?

Who placed the Bible in these lonely hills?

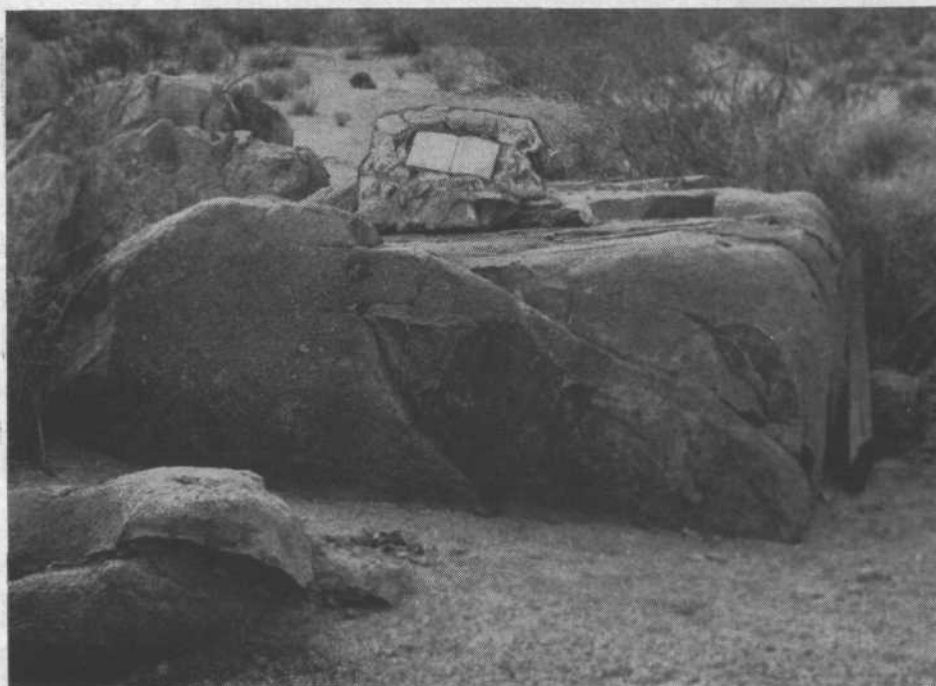
When was it placed here, and are there others nearby?

Strangest of all is that none of the old-timers who live in this region know about the altar.

The turnoff to the mysterious shrine leads east from Highway 395. It is just north of the railroad tracks, 3.1 miles south of the Ridgecrest Junction, or 10.4 miles north of the junction where the Randsburg road joins Highway 395 from Johannesburg (note: there is a second railroad crossing only 3.9 miles north of the Randsburg Junction which should not be confused with the one near the Bible altar turnoff).

The dirt road passes between an old silver-painted house trailer on the right and a shack housing a mine shaft opening on the left. The Bible altar is 2.3 miles from the highway. It is on the south side of the main trail just beyond the crest of a high ridge the road climbs over. Many tracks criss-cross the main dirt road. A jutting point of jagged rock on the left about a mile from the house trailer is a good midway landmark.

Bible altar in the lonely Rademacher Hills.



Hat Styles present few problems to women who live in the sunny Southwest. They know it's far more in keeping with the casual and natural spirit of desert living—and far more attractive—not to hide hair under straw, cloth or feathers.

From Sunbonnet...



ABOVE—Cowgirls wear hats, but not to look smart or modish. They are copying the cowboy's outfit. Photo by Western Ways.

LEFT—Sunbonnet is uncompromising—completely covers crowning glory. Style never became popular in the Southwest. Photo by R. Frances Smith.

...to Sunshine

By PHYLLIS W. HEALD

HERE IN THE Southwest where the sun shines 350 days a year, and some guest ranches make no charge when it does not appear, you'd think we women would have evolved a desert hat. Something large, colorful and protective to preserve our complexions, eyesight and hair. But we haven't.

Strangely enough, hats do not fit into the Southwest picture. The womenfolk of this country have lived for years without finding a need for them. Even the sunbonnet, romantic in poetry and picturesque in effect, has played no lasting part in Western costuming. Brought into this country by

the pioneer women of a century ago, it never became popular. It held no attraction for the natives. To them it served only to cover part of their feminine beauty, hide their jeweled ears and obscure their precious necklaces. As time passed the sunbonnet was sloughed off with the same abandon as the tight bodice and high-collared dress. And the women of the Southwest continued to enjoy their own design for living.

Actually, the lack of a typical head covering for this part of the country is not unusual at all. In the first place, Indians, from whom we adapted many of our present-day clothes, consider hairdress vital to their beauty. Traditionally it is part of their costuming—

part of their way of life. In fact it has distinct significance and meaning. One can recognize, by hairdo alone, whether an Indian is Hopi or Navajo; married or single.

The Mexicans too, take pride in their thick lustrous locks. Never would they dream of despoiling their feminine charm, dimming the bright sparkle of their eyes or belittling their crowning gift from God, with a broad-brimmed cover.

Hats are a Nordic innovation. Very few women of Latin countries, the South Seas or other sultry romantic places in the world, effect them. These women use decoration—flowers, mantillas, scarfs, elaborate combs and even shawls. But, rarely do they desecrate



Any hat would detract from a costume as effective as this. Instead, the short bob, easy to care for, gives a sense of informality. Photo by Western Ways.



Long hair is not a problem. A barrette to keep it off the face, and it is free to dance in the wind and sparkle with sunlight. Photo by Western Ways.

their shining glory with anything as confining, stylized and often unbecoming, as a hat.

Cowgirls wear sombreros when riding only because their costume is fashioned after the cowman's. And men the world over have taken to head covering—probably because they have no wondrous tresses to hide.

Older Indian and Mexican women often wear shawls pulled tightly around their faces. This is a purely protective gesture—to keep out dust and cold. But at pow-wow or fiesta time, their heads are exposed to the elements and regally dressed with turquoise combs, mantillas or gaily-petalled flowers.

Today, many visitors from the East, especially blondes, worry about lack of headgear. They often shed their formal citified millinery fashions, but compromise by wearing inexpensive souvenir Mexican straw hats available at the border towns. However, the fear that sun and wind will ruin hair is a boggy fast being disproved. You

need only look at Mexican children and women to see the absurdity of this belief, for the exquisite thick richness and hair-beauty that apparently is our southern neighbors' inherent right, is a perpetual wonder. Many of those glamorous heads have never enjoyed the dubious pleasure of supporting a hat.

For the ladies whose hair is not accustomed to weather exposure, beauty shops can easily restore the natural oil and curl—usually at a price more pleasing than that of a fashionable hat.

Then, too, colorful scarfs can be used, especially for sportswear. These varied kerchiefs serve a dual purpose—they hold straying locks back during tennis games, golf, hiking or motor-ing, and add flattering brilliance to the scene. Worn in many ways, they can cover the hair or dramatize it. But always, like every manifestation of Southwest dress, they imply unrestricted freedom and a sense of aliveness.

Another helpful and decorative substitute are dark glasses. Made now for beauty as well as utility, they are available with colored rims so one can keep the harmony of an outfit intact, yet protect eyes from brightness and glare. Some of the modern designs are fascinating. I have seen frames with tiny bells hanging to the outside edge, others studded with rubies, emeralds or sapphires to sparkle in the sunlight. Frame shapes are especially styled to flatter different face types.

And so, the costume of our desert land remains unique. After weeks or months of Southwest living, newcomers capitulate and adapt their clothing to the comfort and color that is native. Squaw dresses, moccasins, beaded bags, leather jackets and striking Indian jewelry all have survived the fashions and frills of passing seasons because they possess the basic requisites of charm and freedom.

It is the same with women's hair. Short, long, waving or straight, it



This Apache girl in ceremonial dress, wears her hair in traditional simplicity. Parted in the center, it is held in place and accented with a colorful hand-beaded head band. Photo by Western Ways.

should be unrestrained to shine, gleam and blow. Winds whip and give it life; sun filters through and makes it sparkle; moonbeams dance a halo in

its glory. But always it must remain free—unhampered and unhidden—to add its beauty and romance to the Southwest scene.

EASY MONEY, LIQUOR HARMFUL TO UTE INDIANS

Newly gained riches from oil and gas leases and liquor have set the Ute Tribe back 25 years, believes Judge Heber T. Hall of Roosevelt, Utah.

Roosevelt city officials are seeking state funds to help enlarge the local jail to cope with a big increase in drunken Indians.

"We have had four to five times as many Indians arrested for being drunk or disorderly since 1955 when a state law was repealed banning sale of liquor to Indians," Mayor Kenneth R. Aycock reported.

Judge Hall said 370 Indians had

been arrested in Roosevelt last year for being drunk, compared with only 20 whites. It is difficult to collect fines from the Indians, and there is not enough space in the small jail to lock them up, he added.

Most of the nation's 300 reservations still forbid liquor. As a result, the tribesmen do most of their drinking in public for all to see.

"When they get their monthly checks at Ft. Duchesne, the Indians drive to Roosevelt for liquor which they drink in our town because they are not allowed to take it back to the reservation," the judge said.—*Vernal Express*

Hard Rock Shorty



of Death Valley

"Are you Mister Hard Rock Shorty?" asked the stranger who had just arrived at Inferno store.

Shorty looked the visitor over, noted the brand new levis and boots and Stetson hat. "Yu can jest call me Shorty," he replied after a pause.

"You're just the man I'm looking for—a real old desert rat, if you'll pardon the use of that rawther uncomplimentary term you prospectors apply to each other," the stranger gurgled. "I've always wanted to meet a desert miner and go on a prospecting trip with him. Of course I will furnish all the groceries, and I've got a new tent and some canned caviar and a portable radio."

"I guess I ain't the feller you're lookin' fer," Shorty interrupted, and sauntered into the store to share his disgust with the clerk.

"One o' them blasted dudes!" he exploded. "I took one o' them on a trip once, an' no more o' that fer me. We set up camp over at Alum Spring the first night. Had a sack o' spuds, an' some flour an' coffee—enough fer a week, an' I left word with Pisgah Bill to bring us another load o' grub in a few days.

"I told the dude to wash the taters, an' do you know what that blankety-blank tenderfoot did? While I wuz out gatherin' some wood he took the whole sack o' potatoes over an put 'em in the spring—sack an' all.

"Fust thing I knowed I heard him hollerin' an' when I went over to see what wuz up there he wuz fishin' around in that water tryin' t' find the taters. When he finally brought 'em up that alum water'd shrunk 'em down to about the size o' peas in a Bull Durham sack.

"An' all we had to eat fer a week wuz sourdough biscuits an' coffee. I ain't got no more time fer dude prospectors."



Jimmy Dayton's first Death Valley job was as a swamper on a 20 Mule Team borax freighter.

Saga of Death Valley's Jimmy Dayton

Jimmy Dayton's name crops up repeatedly in the lore of Death Valley. While more articulate contemporaries such as Death Valley Scotty and Shorty Harris supplied the ingredients for bizarre anecdotes and clever newspaper copy, Dayton's attributes—loyalty and sincerity—were largely overlooked by the local color-seekers. But, that's the way Jimmy Dayton preferred it. He was that kind of man.

By AUDREY WALLS LLOYD

IT WAS NOT in Jimmy Dayton's heart to leave Death Valley. Perhaps he never should have tried.

Jimmy had lived quietly in the valley for nearly 20 years. To him this region was a siren who held him enchanted, while those who did not know these arid acres regarded Jimmy's siren as a hag whose searing breath and clawed hands conspired only with tragedy.

Jimmy stayed on even during the forbidding months—June, July, August and September. He knew Death Valley, its wagon ruts, canyons, water holes, burro trails, mesquite thickets, and sand dunes. As for loneliness—he never thought of it until he fell in love. Only then did he try to leave the Valley.

Most motorists who pass the stone monument erected to the memory of Jimmy Dayton and Shorty Harris on the west side of Death Valley can recall a little of Shorty's story—but nothing of Jimmy's. Unlike a number of other pioneer Valley residents, Jimmy was not an exhibitionist, a spinner of tall tales—a character. Instead, he was a soft spoken salt-of-the-earth fellow who contributed as much—perhaps more—to the Valley's traditions as the more talkative frontiersmen.

Most notable of the characters was Death Valley Scotty who made front

page news for 50 years. Shorty Harris, the inveterate prospector who was buried at his own request at Jimmy's side, is remembered for his individuality. Then there was Bellerin' Teck Bennett who, upon his arrival at Furnace Creek to begin ranching operations, roared to the Heavens (there was no one else around to hear his words): "All this belongs to me!" meaning not only the acres he cultivated, but all of Death Valley.

In 1882 Jimmy was swamper for Ed Stiles, the first man to drive a 20 Mule Team outfit out of Death Valley. Later Jimmy was made foreman of Greenland Ranch and he began this work almost where Bellerin' Teck left off, but he did his job quietly. The legacy Jimmy left to the Valley was his sense of loyalty.

The ranch, whose name was changed to Furnace Creek in 1907, was then owned and operated by the Harmony Borax Works. It was here at the base of the Funeral Mountains, on the white floor of *Tomesha* ("Land Afire") that an oasis grew.

Under Jimmy's hand alfalfa fields were planted and harvested to provide feed for the Harmony 20 Mule Teams, pasturage for cattle, hogs and sheep,

The Death Valley road a half century ago. Photo by Frasher's, Pomona.



and feed for turkeys and chickens. Thus was fresh food provided for the Harmony crews during the October to May working season.

During the summer months the Valley was unbearable for everyone except Jimmy Dayton. Supplied with water from Furnace Creek Wash, the ranch practically took care of itself

during the off-season and all Jimmy did then was guard the Borax Works equipment. He took it easy in the shade of the tamarisks and drank plenty of water.

Sometimes during the summers Jimmy would pack his outfit and leave the blazing pit for a brief vacation in the cooler atmosphere of Los Angeles.

With several month's pay in his pockets he would go on a spree sufficient to last him the year ahead.

On one of these Los Angeles outings he fell in love. When he returned to the ranch he brought his red-haired bride with him.

At first Mrs. Dayton was thrilled with the novelty of her new home. Greenland Ranch was beautiful in the spring and winter months. She reveled in the delicacy of the blooms, the golden poppies—tiny cups of yellow that floated on invisible stems.

There were brown-eyed primroses, fragrant by day, and wild roses that filled the night air with sweetness. Tall white daisies nodded to her, and she listened to the yellow whispering-bells that dried on their stalks and clung there to rustle sweetly when the wind blew.

The parched days of summer ended in unbelievable sunsets. Nowhere else on earth were they as beautiful. Then the stars trooped out to form great beacons in the sky. This valley was a stark and lovely cathedral.

But apparently it was not enough. Gaiety beckoned from Los Angeles. She heard laughter and voices and music.

At first she struggled against these disconcerting sounds. She turned her eyes to the flamboyant Panamint and Funeral mountains that enclosed her world—this white pit in the lap of the earth. She listened to the killdeer, the doves and rock wrens, and she watched the crested long-tailed road runners scurrying swiftly across the sands. There were poisonous snakes, too, and the ravens which circled heavily in the sky filled the air with hoarse croaking . . .

What kind of man was this who asked her to make a home in a blistering sink? "Jimmy! Take me back!"

Sadly he outfitted a wagon for the trip.

When Jimmy returned alone, things were different. There was little work to do at the ranch now, for the Harmony Borax Works had been closed for several years, and Death Valley saw little life except the Indians, plodding prospectors and their burros.

Years passed and the ghost-like remains of the old borax plant depreciated under the erosion of wind and neglect. But Jimmy stayed on. He believed, like others, that the shutdown was temporary, that the newly discovered borax deposits at Calico would play out—and then the Harmony would come to life again.

These were long and lonely years, but Jimmy faithfully performed his duties. He grew and baled alfalfa and

Additional Rainfall Benefits Southwest River Watersheds . . .

Above average precipitation fell over most Southwest river watersheds during March, to further improve the current water-year outlook, the Weather Bureau reported.

GREAT BASIN

Streamflow forecasts for the major streams of the Great Basin were revised upward from 5 to 15 percent over the previous month's predictions. With near normal precipitation through June, the April to September runoff is expected to be near the 1938-52 average for the upper Bear River; 115 percent for the Logan; Ogden, 130; Upper Weber, 125; Six Creeks near Salt Lake City, 115.

Sevier and Beaver, 150; Humboldt near Palisade, Nevada, 85; South Fork of the Humboldt, slightly above average; Martin Creek, 150; Walker, near or slightly above average; Carson, 90; Owens, 95.

March rainfall over the Mojave River Basin was much above normal. Outlook for the water-year streamflow is for near 135 percent of average, if precipitation through June is near normal.

UPPER COLORADO BASIN

March rainfall was inconsistent over the Colorado Basin, but most areas received above average amounts.

The Colorado and its tributaries above Hot Sulphur Springs, Colorado, is forecast to flow near 85 percent of the 1938-52 average; Blue River and the Roaring Fork, near average; Taylor River, 115; Uncompahgre, 130; Dolores, 120.

The April to September flow of the Colorado near Cisco, Utah, is predicted to be 4,450,000 acre feet or 99 percent of the 15-year average.

Near average runoff is in prospect for the extreme headwaters of the Upper Green in Wyoming, but below average streamflow is indicated for that

river at Linwood, Utah. Streamflow for the lower Yampa and White rivers in Colorado is forecast to be near 120 percent of average. Forecasts for the tributaries in Utah range from 115 percent of average for the upper Duchesne and Huntington Creek to near average for the lower Duchesne and Price rivers. The expected April to September flow of the Green at Green River, Utah, is for 92 percent of the 15-year average; San Juan and Navajo rivers, 95 percent.

LOWER COLORADO BASIN

For the second consecutive month, precipitation over the Lower Colorado Basin was much above normal. While the Little Colorado's water-supply outlook was improved, below average November, 1957, to June, 1958, runoff still is expected for that river at Woodruff, Arizona. Above average streamflow is in prospect for the Chevelon Fork and Clear Creek near Winslow, Arizona.

The runoff of the Upper Gila Basin is forecast to be above the 15-year average. The April to June streamflow of the Salt River near Roosevelt, Arizona, is forecast to be 73 percent of average; Verde River above Horsehoe Dam, Arizona, 173 percent.

RIO GRANDE BASIN

March precipitation over the Colorado portion of the Rio Grande Basin ranged from near normal to near 150 percent of normal, while it was even more favorable over the New Mexico portion. These streamflow predictions resulted: Upper Rio Grande in Colorado, 110 percent of the 15-year average; Alamosa Creek and Conejas River, 90 percent; eastern tributaries along the Sangre de Cristo Mountains near the Colorado-New Mexico state line, near normal; smaller streams near Santa Fe, 150 percent; Rio Chama, 128; Rio Grande at Otowi Bridge, New Mexico, 97.

kept the yard in order and the tamarisks watered.

It was a blazing August sun that poured its heat into the Valley during the summer of 1899. It created an inferno over the salt and borax sinks, and in the heart of Jimmy Dayton as he lay in the shade with a jar of water at his side. He watched the sudden flight of three sparrows. Back to the mountains—that's where the sparrows were going—where the air was moist and the butterflies plentiful.

"If we are to live together," his wife had told him, "you will have to go where there is life."

Suddenly he became aware that his work in the Valley was done. It was a dream to think that the 20 Mule Teams would return. Having tasted human companionship, his loneliness was more unbearable. He would go. A man ought to be as smart as a sparrow!

He wrote his letter of resignation, addressed to W. W. Cahill of the Harmony Borax Works at Daggett, the company's nearest office, 150 miles to the south.

In the letter he mentioned the date he planned to leave, and that he was bringing a four horse team, two led horses which he had borrowed in Daggett the last trip, a wagon with his household goods and, of course, his dog. The letter was a precautionary measure. Even in summer the trip to Daggett should not take longer than a week—but it was always a good idea to notify the office in advance. If something did go wrong help would be sent.

The nearest post office was on the other side of the Panamints at Ballarat. For five dollars Jimmy hired an Indian to mail the letter. The messenger climbed the mountains, spent the night at the spring in Wild Rose Canyon, and reached Ballarat the following evening. Tired and thirsty after the long hike, he headed for the nearest saloon. It was two weeks before the letter reached Daggett.

"Something has happened to Jimmy!" Wash Cahill exclaimed. "This letter is two weeks old which means Jimmy is a week overdue now. We'll have to find him."

"I'll go," Frank Tilton offered. "Who will go with me? It's a terrible trip!"

Dolph Navares stepped up. "I'm ready," he said.

They passed Garlic Spring, Coyote Well, Saratoga Spring and Bradbury Well. No sign of Jimmy.

On the fourth day the men headed into the furnace. They toiled on, deep in the salt and alkali floor of the Valley. Now they were only 22 miles from Greenland. If Jimmy had started

out surely he would have made it to Bennett's Well. That was it! He had changed his mind — decided not to leave after all. "We'll find him asleep in the shade, with a jar of water by his side . . ."

Tilton and Navares tried to smile. Their heat-parched lips would not respond.

Three miles beyond Bennett's Well they found Jimmy's wagon, the four horses dead in their harness. The animals had made a wild effort for freedom and lay sprawled in the churned sand. The two led horses lay dead at the rear of the wagon, their necks stretched from the short halters tied to the end gate.

Jimmy had tried to save the horses.

somehow made it to the mesquite thicket.

Tilton and Navares fed and watered the dog, and continued on to the ranch. Next morning they ripped boards from the barn and made a coffin. Then they returned to the thicket and buried Jimmy in a shallow grave. One of them said a prayer while the other placed a wooden headboard to mark the grave.

Later, after the headboard split to pieces in the sun, Pauline Gower, who lived at a nearby mine, thoughtfully replaced the marker with an old ironing board on which she wrote the name, Jimmy Dayton.

They gave Jimmy two more funeral services after that. The second came



Stone monument now marks the graves of Jimmy Dayton and Shorty Harris.

The reins which had been tied to the back of the driver's seat, were slashed through. But an instinctive habit carried over from his swamper days—of setting the brakes the instant the wagon stopped—kept the animals from reaching water and forage.

Jimmy's dog, whining weakly from a nearby mesquite thicket, attracted the attention of the two men. The starving heat-crazed animal's legs were draped across the body of Jimmy Dayton.

They knew that his illness—stroke, heart attack or whatever it was—had been induced by the heat. Jimmy had not wanted to lie down in the broiling sun, and the horses would take the wagon that provided the only patch of shade. After slashing the reins, he

35 years afterward when Shorty Harris was buried by his side. A few years later, State Senator Charles Brown of Shoshone had a bronze plaque made to mark the graves. And when a new road was built along the west side of the Valley, a monument of native stone was erected for the graves, and the bronze plaque cemented in its center. This event provided the third service for Jimmy.

The date on the plaque, as on the ironing board marker, gives the year of Jimmy's death as 1898. Historical sources indicate that it was the following year. But, Jimmy doesn't care one way or the other. He never wanted to leave Death Valley anyway. So, in the warm sands he loved, Jimmy Dayton sleeps.

LETTERS

They're More Than Pebble Pups . . .

Encinitas, California

Desert:

The title "Pebble Pups" for the picture on the April back cover of two boys examining rocks was certainly inadequate.

You sold that picture short a thousand percent!

A better title would have been: "America—Past, Present and Future." Those young men (not pups) are learning the value of the land the hard way. They have on the uniform of work.

MERLE A. HARRIS

Black-Petalled Wildflower . . .

Willits, California

Desert:

While exploring the desert on the west side of the Palo Verde Valley in February, my husband and I discovered a strange wildflower. It had black petals and a center of pure white. The plant was about three inches in height and had no foliage. The flower was less than two inches in diameter and shaped like a miniature sunflower.

We were unable to identify this plant.

MRS. E. H. MAIZI

Dear Mrs. Maizi—According to Dr. Edmund C. Jaeger, the plant probably was a dried or drying specimen of a fungus called "tylopoda." Its wide-spreading thin flat spore disk splits into rays and resembles a flower such as a daisy. Dr. Jaeger has never heard of or seen a black-petalled flower.—R.H.

Is It Against the Law? . . .

Yucaipa, California

Desert:

I like to go to the desert—not to kill rabbits and snakes; not to find uranium; not to look for lost mines; not to go rockhounding; not to dig for artifacts; not to gaze upon desert flowers; not to behold a desert sunset; not even for fresh air—I have plenty of it where I live.

All I want is to find a little clay in some out-of-the-way wash, take it home and see if it is workable on my potter's wheel—a fascinating hobby.

Now, I'm wondering after reading about the antiquities laws in the November '57 *Desert* if it is unlawful to cart home a bucketful of dusty clay. Clay is rather antique, isn't it?

M. L. NORSTAD

Friend Norstad: No, clay is not an antique—at least not in its natural state. Perhaps 10,000 years from now when the archeologists of that period dig up some of those beautiful ceramics you are now making, they will be classed as antiques. And your ghost will be thankful there is an antiquities law to insure that your handiwork will be carefully preserved in a museum rather than broken up by vandals.—R.H.

• • •

Wrong Date . . .

Austin, Nevada

Desert:

Stokes Castle near Austin was not built in 1879 as reported in the May '58 *Desert*. The Stokes brothers built it in 1897.

JOCK TAYLOR

Reese River Reveille

TRUE OR FALSE:

Here are 20 more of those brain-teasers for the folks who think they know a great deal about the desert land of the Southwest—or for those who would like to learn more about this fascinating area. The questions include geography, botany, mineralogy, history and the lore of the desert country. Twelve to 15 is a fair score, 16 to 18 is excellent. Any score above 18 is exceptional. The answers are on page 32.

- 1—The tarantula is more poisonous than a sidewinder. True..... False.....
- 2—A Mescal Pit was used by prehistoric Indians for burying their dead. True..... False.....
- 3—Juniper trees are seldom found below the 2000-foot level. True..... False.....
- 4—The door of a Navajo hogan always faces north. True..... False.....
- 5—The Colorado Desert is located in the State of Colorado. True..... False.....
- 6—If your hostess served piki bread you probably would be dining with the Apaches. True..... False.....
- 7—The Virgin River of Utah and Nevada empties into Lake Mead. True..... False.....
- 8—Father Escalante accompanied Juan Bautista de Anza on the historic trek that brought the first white settlers to California. True..... False.....
- 9—Butch Cassidy was a notorious outlaw. True..... False.....
- 10—Azurite is found in copper ores. True..... False.....
- 11—Pisgah is the name of an extinct volcano in Southern California. True..... False.....
- 12—Ocotillo is a member of the cactus family. True..... False.....
- 13—Lowell Observatory is located near Flagstaff, Arizona. True..... False.....
- 14—Color of the blossom of agave or wild century plant is red. True..... False.....
- 15—Archeologists are now able to translate most of the petroglyphs left on the rocks in the Southwest by ancient Indians. True..... False.....
- 16—The ghost mining camp of Rhyolite is in Nevada. True..... False.....
- 17—Much of the Imperial Valley in California is below sea level. True..... False.....
- 18—Solid chunks of ironwood will float in the water. True..... False.....
- 19—Motoring from Flagstaff to Sedona, Arizona, you would follow the paved road through Titus Canyon. True..... False.....
- 20—Montezuma Castle National Monument is in Arizona. True..... False.....

KANE CREEK ROAD REGRADED FOR GLEN RIVER RUNNERS

Several bad spots on the Kane Creek jeep road have been repaired, the Bureau of Reclamation announced.

Boating parties entering Glen Canyon at Hite, Utah, used the Kane Creek jeep road exit from the Colorado River all last year, but winter flash floods damaged it and repairs were necessary.

The road can be traversed only by heavy duty high-centered vehicles, and four-wheel drive is recommended. Passenger cars should not attempt to travel the road.

Blasting at the Glen Canyon Dam-site at the spillway and keyway sections on both rims of the canyon is a daily occurrence. As the blasted areas are mucked out, rocks and dirt are pushed or dumped over the rim continually, and because of this hazardous condition, Glen Canyon Dam-site is closed to passage by river runners.

The Whipple Mountains in Southeastern California are a chalcedony treasure house. In one large foothill area the author and his companions found millions of the beautiful white stone rosettes — covering the ground like fallen snow.

By EUGENE L. CONROTTO
Map by Norton Allen

JACK LIZER, field trip chairman of the Shadow Mountain Gem and Mineral Society of Palm Desert, California, is not the kind of man who allows a desert rainstorm, darkness or vague directions deter him from finding a gem field. A Coachella box manufacturer by trade, he is a very practical and self-sufficient person. "I have to be," he laughed, "I've got six children—and they can't eat tumbled stones."

Last winter I had the pleasure of accompanying him on a scouting trip into the Whipple Mountains for an unusual concentration of chalcedony roses someone had described to him. These desert jaunts are a regular part of his field trip duties, and precede by a week or two the club's visit to the areas he selects. Between 70 and 100 persons usually attend the field trips, and only twice in the last two years has he led members into an area previously visited by them. During this period Jack drove 3500 miles—all at his own expense—scouting gem areas and leading convoys.

"Isn't that rather expensive—for a father of six?" I asked.

Chalcedony Roses from the Whipple Mountains.



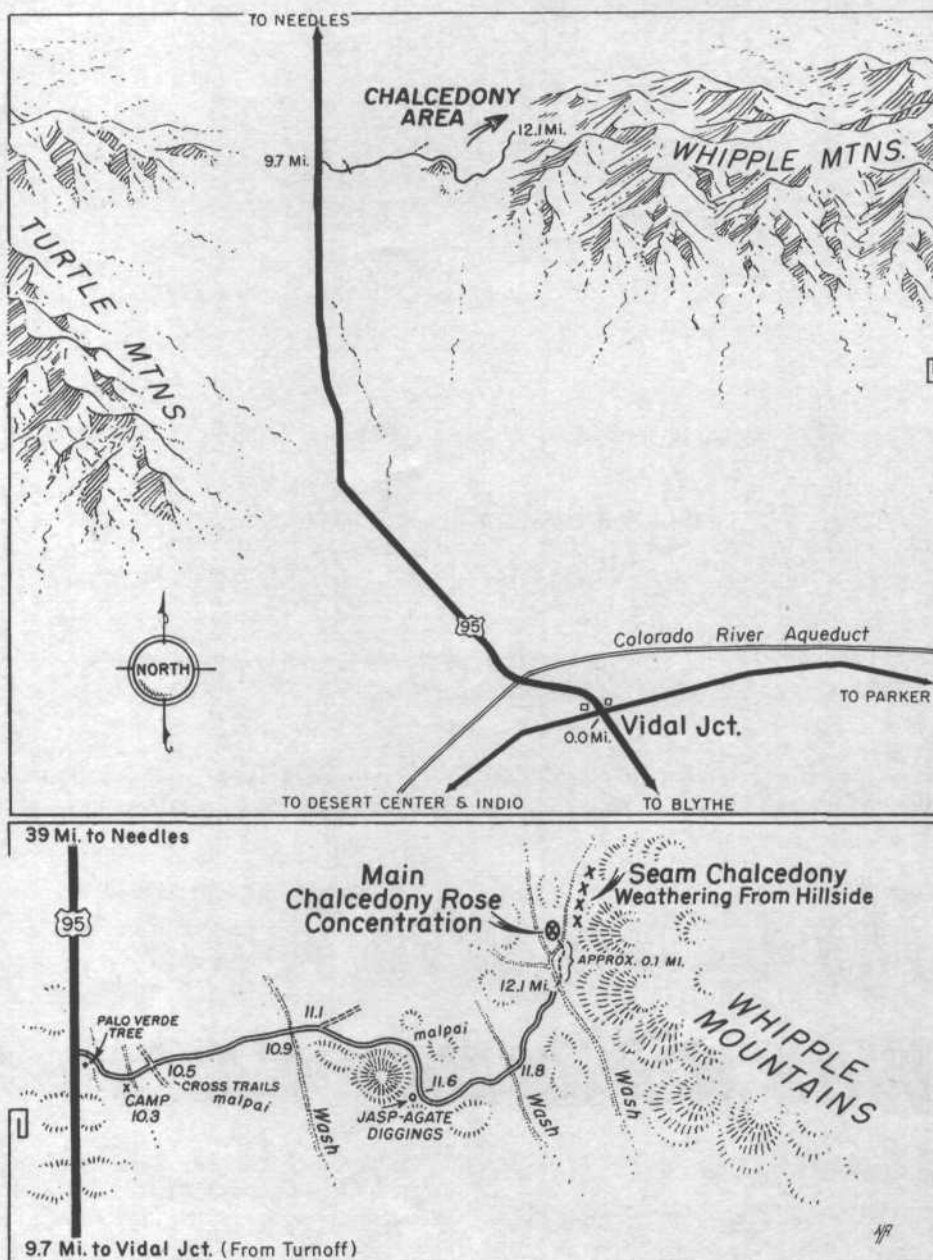
Jack Lizer of Coachella.

The Desert Was White With Chalcedony Roses

"I hope to tell you it is!" he answered in his good-natured way, "but the outing is the important thing. I can't describe just how wonderful it feels to sit down with the family next to that campfire after everyone has had a good day collecting rocks in the fresh air."

The Whipples are a low and highly dissected desert range lying northeast of Vidal Junction, California, a gasoline station-cafe-border inspection station crossroads on U.S. Highway 95 midway between Blythe and Needles. The mountain mass trends east and west—flanked on the east by the Colorado River waters of Lake Havasu backed up behind Parker Dam, and on the west by the highway which cuts up the broad alluvium valley separating the Whipples and the craggy Turtle Mountains.

In the exploratory party, besides Jack and myself, were club president Herb Ovits of Oasis, Doug Duckering of La Quinta, Henry Hiatt of Rancho Mirage, Bob Sharman of Indio and Chuck Hill of Palm Desert. We made



the trip in two vehicles, Jack's rugged butane-burning travelall, and a jeep.

Despite the offhand directions and the fact that we entered the Whipples long after the dreary overcast day turned into a pitch-black night, Jack found the right wheel tracks which lead eastward from Highway 95 into the foothills along the mountain's northern flank. The turnoff is 9.7 miles north of Vidal Junction at the bottom of a dip in the highway, and just beyond a Highway 95 sign. A large palo verde tree stands near the turnoff. On the opposite side of the highway, at the top of the rise, is a Milepost 270 marker.

As we turned off the pavement, our glaring headlights caught a bewildered bobcat. A few yards down the dirt trail a lean coyote stood in frozen concern as the monstrous lights bore down on him. Civilization, except for

a very rare—and very unfortunate—tin can or hot dog wrapper, has not radiated far from the lightly-traveled highway which serves this 8000-square-mile corner of California's eastern Mojave Desert.

There is little evidence of man's encroachment in the Whipples. The Colorado River Aqueduct runs along the mountain's southern base, and about two dozen mines, most of them inactive, are indicated on the area's topographic maps. Gold, copper, manganese and other deposits have been developed here on a small scale during the past half century. The desert is slowly dissolving the wheel tracks made during wartime maneuvers, and here and there throughout the range are bits of rusting shrapnel.

We camped that night on the banks of a wide sandy wash overgrown with palo verde trees. Wood was plentiful,

and in the cheery light of a blazing fire we ate a hearty supper, and then turned in.

Next morning seven men never moved faster—it was raining! In the semi-light of the misty dawn the "Thumbs of the Turtles"—massive volcanic cores dominating the western skyline—were seemingly rooted to the dark and ominous clouds rolling toward us and the Whipples. In a matter of minutes we ate breakfast, broke camp and were on our way.

There was no grumbling. It takes more than rain to lessen the joy of a new desert day. A little water wasn't going to hurt us.

"Besides," sang out Jack, "the rain is going to wash those specimens nice and pretty like!"

We continued on the firm and well-marked entrance road for nearly a mile beyond the wash, and then swung right onto a rougher trail. After working around the malpai shoulder of a prominent peak jutting a couple hundred feet out of the creosote-dotted and wash-furrowed plain, Jack pulled to a stop on the knob's northeastern flank. Experienced desert drivers should be able to take conventional cars with high clearance to this site.

In the rainfall—which had turned from a drizzle to a heavy downpour—the desert pavement stretching northward glistened like freshly poured asphalt. It covered most of this wide rolling basin, interrupted in many places by ridges, meandering washes and boulder-strewn mounds. This is not a place to visit during the hot summer months, for the ground temperature on the shadeless heat-retaining malpai must be terrific. Even in the midst of a winter storm, some of the stone-lined side canyons needed only a roof to completely resemble the interiors of brick ovens.

The rain turned the land's normally subdued colors into vivid reds, golden yellows, grays and greens. Most conspicuous were the bright red spines of waist-high barrel cacti scattered throughout the area. These plants, along with palo verde, ocotillo, cats-claw, smoke tree and other species indigenous of the low Colorado Desert, are widespread throughout this Mojave Desert range.

Rain or no rain, this was the place to look for gem stones, we decided, and shouldering collecting sacks and rock hammers we fanned out over the area. In an hour we met back at the peak's flank. Doug Duckering had found a very good jaspagate outcropping on a continuation of the hill slope only a few hundred yards from the parked vehicles, and Henry Hiatt located the fantastic chalcedony rose bed



Members of the party collect chalcedony roses. Light area men are in is almost completely covered with the stones.

in a narrow draw on the other side of the basin's main wash.

"At first I thought the rain had turned to snow," Henry said, "but the darned stuff was chalcedony roses—the ground is covered with them."

We drove first to Doug's jaspagate

deposit. Here large and very excellent specimens were weathering out from beneath the malpai surface stones. Four colors predominated in the material: gold, red, blue and brown. These specimens are suitable for book-ends and other large polished pieces.

For the collector who does not do lapidary work, they have value as attractive garden stones and cabinet pieces.

From the jaspagate outcrop we cut a trail to the wash, crossed it and once on the opposite side headed in a more

Time out for lunch. Bob Sharman, Herb Ovits and Doug Duckering, from left, prepare meal.



northerly direction paralleling the arroyo for a short distance, and then veering right into the foothills. Jack parked at the base of a red knoll near the entrance to an open side canyon. It was a short hike up the wash to the chalcedony roses.

No one in the party had ever seen a sight to compare with this. We were surrounded by millions of the thumb-nail-to-hand-sized rosettes. Here in several white patches 25 to 50 feet in diameter were some of Nature's most fantastic designs. We crawled on hands and knees to better examine the stones, and exclamations of "Look at this one!" and "I found a beauty!" filled the draw for the next hour.

The delicate porcelain-like chalcedony was twisted into pink-white gar-

goyles, ringlets, bubbles, cones, saucers, commas, flowers, curls, spires, buttons, knots, plumes, caricatures—no two alike.

Although the Whipple roses do not compare in color to the white, pink, red and brown chalcedony found at Coon Hollow 125 miles to the southwest, nor to Coon Hollow's fire-to-clear chalcedony varieties and even more fantastic shapes, the concentration of good roses in the Whipples is truly outstanding.

The rain helped a great deal, but chalcedony roses must be cleaned in an acid bath to remove all stains, dirt and foreign matter. Here is Jack's method: soak the stones for 24 hours in clear water; scrub lightly with toothbrush; place in tightly-covered glass

bowl containing a solution of one part muriatic (hydrochloric) acid to seven to 10 parts water; after 24 hours in acid bath, remove stones and rinse in fresh water; finish cleaning with toothbrush. Do not pour the used acid down the drain for it will corrode plumbing.

The rose baroques find wide use in lapidary art, including settings for bola ties, brooches, earrings, breast pins, buttons, pendants, etc. For these purposes and many others, a large variety of metal mounts are available from lapidary dealers.

The larger roses make excellent paperweights, ash trays, cabinet specimens and novelties.

Chalcedony roses are ideal for folks who think they might be interested in the lapidary hobby, but who have not yet purchased equipment. The stones require no cutting, sawing or polishing, although artistic hobbyists often use small hand tools to enhance designs on some specimens. Occasionally an uneven back must be sanded down to assure a better contact on the mount, but this is a simple job.

Some of the igneous and sedimentary rocks that make up the Whipple Mountains date back to the Pre-Cambrian era—800,000,000 years ago and longer, the age of larval life and primitive invertebrates. When mammals and flowering plants appeared on this earth in the more recent Tertiary period (2,000,000 to 60,000,000 years ago), volcanics joined the Whipples' older stones.

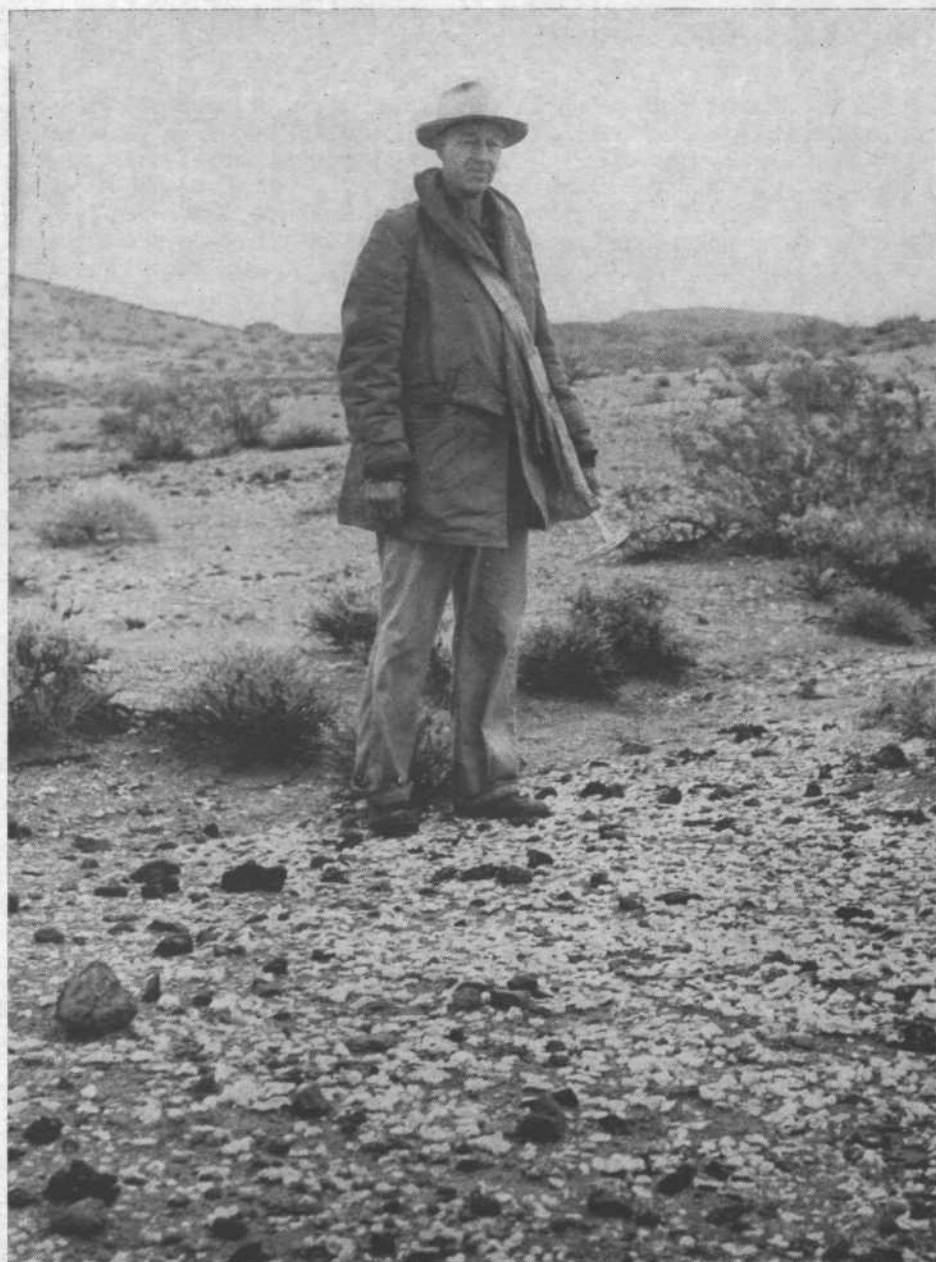
We traced an infinitesimal portion of this range's life story — eons of mountain building by colossal pressures beneath the earth's crust, and eons of grain-by-grain mountain leveling by wind and rain. On the slope above the rose area, the very storm we were in washed away a bit of mud that had once concealed a beautiful chalcedony seam.

"Now you see why I don't believe in 'cleaned-out' gem fields," said Jack. "Nature will keep weathering out these roses for centuries."

Following the wash at the base of the low hill around to the right for nearly a half mile, we found roses on the low ground and exposed seam chalcedony on the hillside along the entire distance. The further upcanyon we prospected, the more drusy (covered with minute quartz crystals), and more pink in color was the chalcedony.

Before we left the Whipples, the sun broke through for a brief moment. The foothills glistened fresh and clean in the bright light, and the crystallized roses sparkled at our feet. It had been a day to remember.

Henry Hiatt in a heavy concentration of white chalcedony roses.

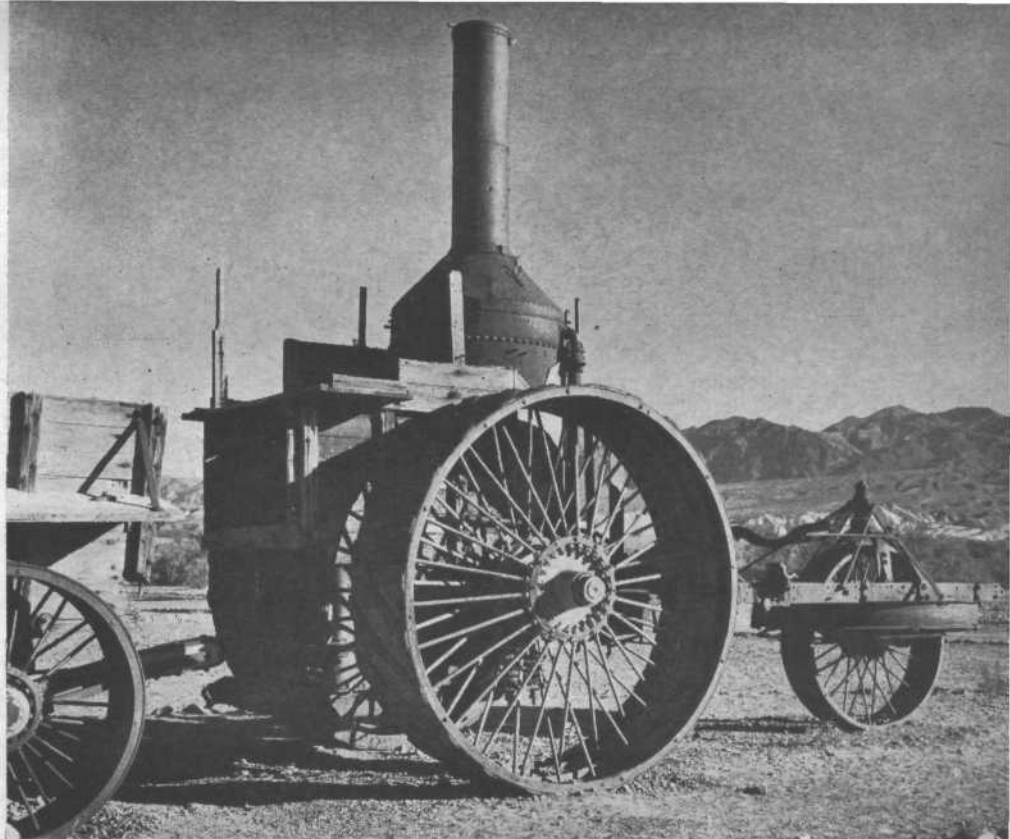


OLD HARMONY BORAX WORKS

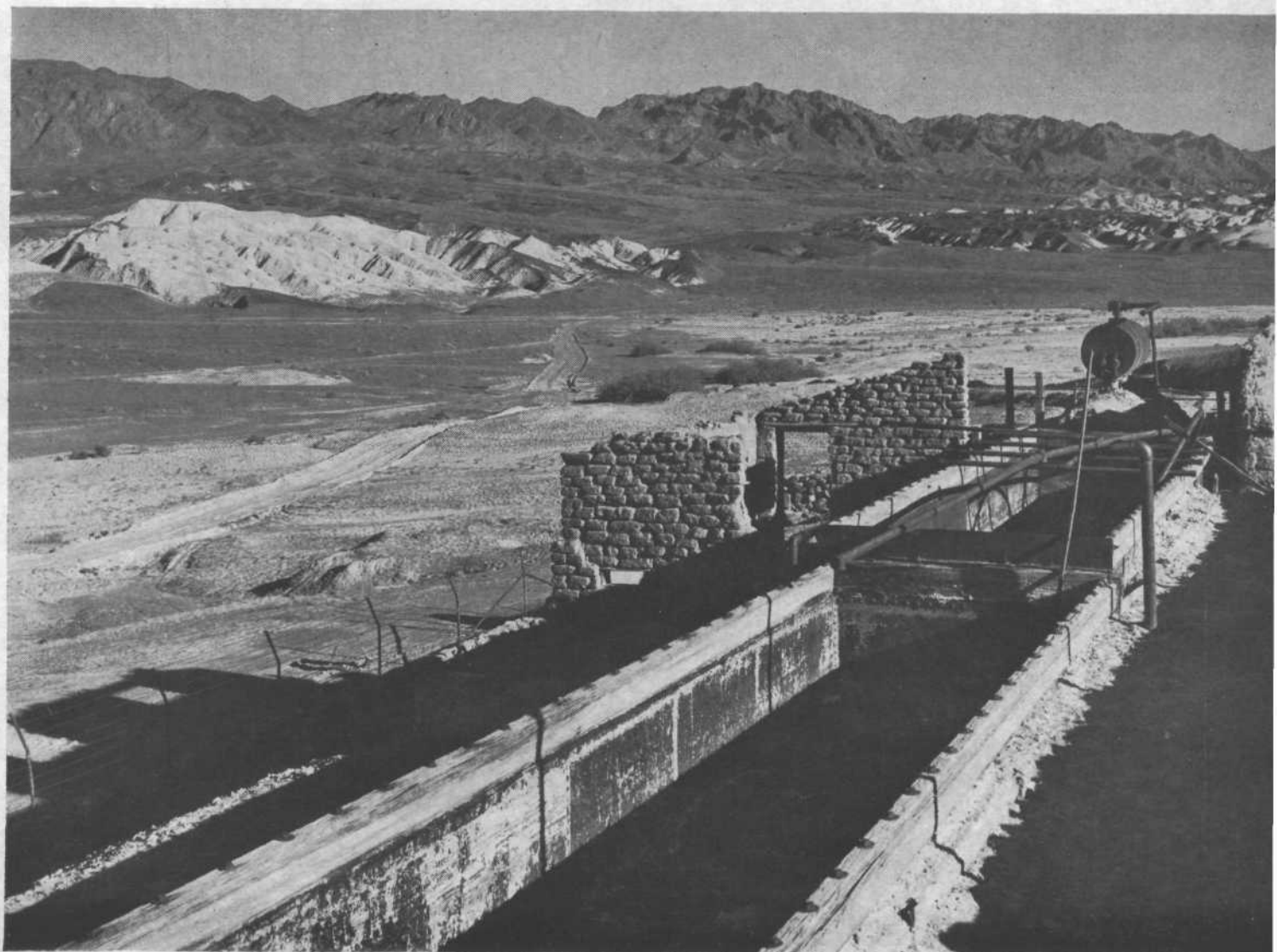
By JOSEF and JOYCE MUENCH

An interesting Death Valley landmark is the first borax mill to be operated there—the Old Harmony. Borax was mined on the valley floor, refined at the mill, and then transported to Mojave, 160 miles away, by the famed 20-Mule Team wagons.

Operated from 1882 to 1887, the borax works (photograph below) have long been a Death Valley ghost. In those early days, the ore was hauled to the mill in crude wagons powered by wood-burning steam engines (photo at right). Significantly, today borax is an ingredient of powerful jet and rocket engines.



Old Dinah, a wood-burning steam engine used to haul borax from mine to mill in Death Valley. The engine was abandoned because of its huge fuel requirements.

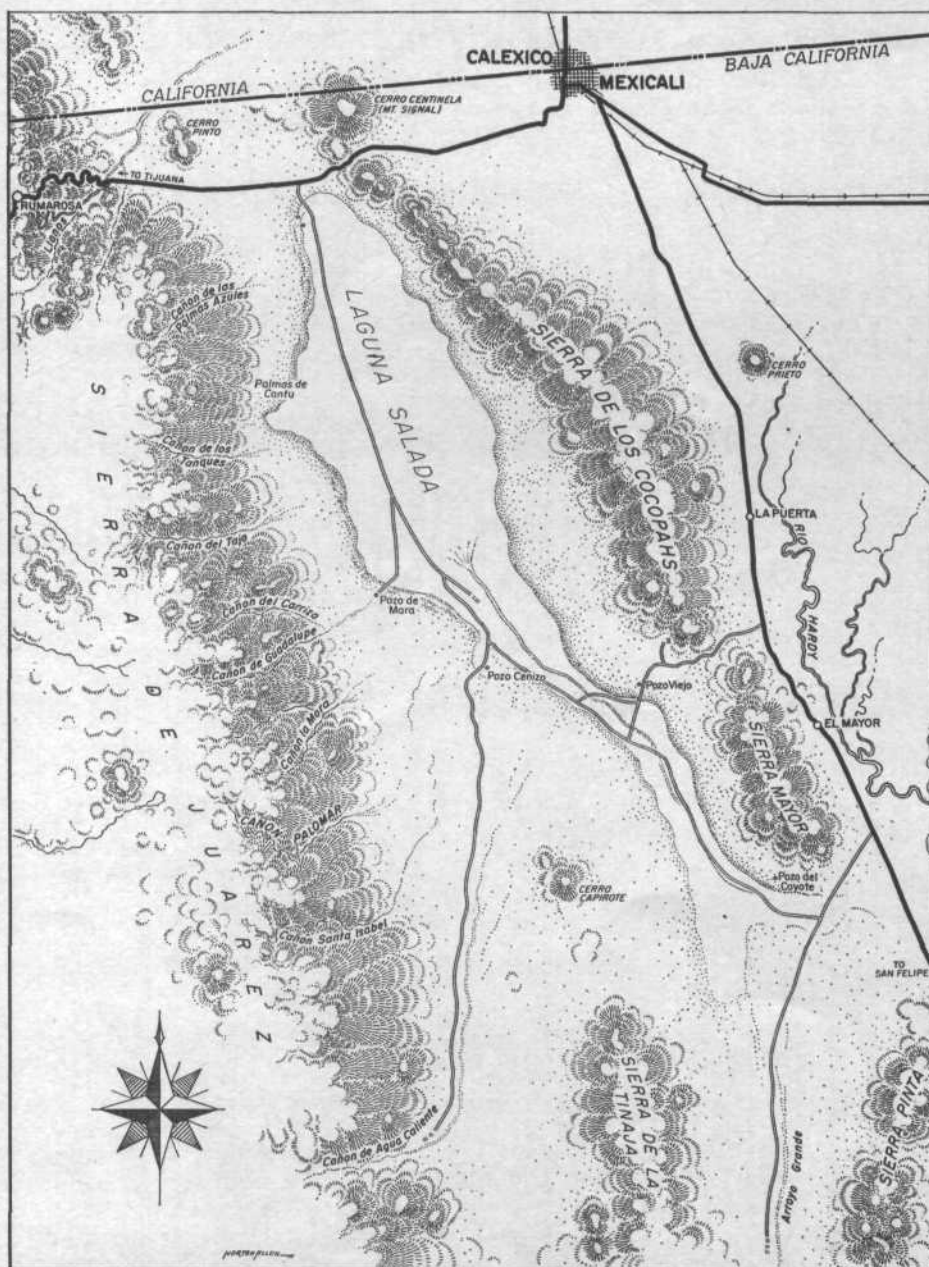


ON DESERT TRAILS WITH A NATURALIST --- L

"Dry Lake" Filled With Water

For the first time in many years, the normally dry Laguna Salada contains a shallow body of water on its flat and barren surface. But, dry or wet, the naturalist finds much to interest him in this stark and uncompromising land.

By EDMUND C. JAEGER, D.Sc.
Curator of Plants
Riverside Municipal Museum
Photos by the author
Map by Norton Allen



THE PAVED ROAD between Mexicali and San Felipe in Baja California passes through a 10-mile-wide area of dry gray mud flats.

This unusually barren region is the southeastern entrance to the Pattie Basin, a near-or-below sea level valley, similar in many respects to the adjacent Salton Sink to the north. Pattie Basin is bordered on the west by the steep and picturesque escarpment of the Sierra Juarez; and on the east by the barren and austere Cocopahs. On its floor is a desolate 40-mile-long mesquite and saltbush fringed dry lake—the Laguna Salada.

Since late autumn of last year there are wide stretches of water on the mud flat area along the Mexicali-San Felipe highway. Under the road causeway numerous large culverts channel water to the road's west side. On emerging the water spreads out into a vast placid sheet which finally pours into several foot-deep streams rushing northward to fill the below-sea-level flat bed of the Laguna Salada.

When Bill Wells and I visited this area in March, the water covered a third of the lake bed. It was confined for the most part to the eastern or lowest part of the basin. Here the land has sunk slightly along a fault which borders the Cocopah Mountains. The lake's water was shallow, and when the summer sun pours down upon it, evaporation will occur at a prodigious rate, probably as much as a quarter to a half inch daily.

Except for small amounts of water derived from winter rains and infrequent summer cloudbursts, the Laguna has been dry for many years. The reason for this recent appearance of water is that more water than usual has been released at Hoover Dam in anticipation of a large summer runoff from snow packs in the Rockies. Chances are much water will be sent down the Colorado this year, and then the erstwhile dry Laguna may be nearly filled. What a thrilling and refreshing sight it will be to see this broad body of calm water after all these dry years—shimmering like a mirror in the brightness of the desert's summer sun!

In times past the most often used name for the intermittent lake we now call the Laguna Salada was Laguna



On the Laguna Salada.

Maquata or Macuata, probably derived from the Central Mexican Indian word *macua* or *maqua* which means "Indian." *Maquata* may also mean "yellow," "yellow place" or "yellow water" according to University of California archeologist Dr. Albert B. Elsasser. This is based on the alternate name for Laguna Salada mentioned by historians — *Rio Amarillo* (Yellow River). *Ma* as a prefix may refer to location in the Yuman languages, while *kwas* or *kwat* means yellow, red or orange.

The below-sea-level basin in which the Laguna lies, like the Salton Basin to the north, is without doubt an ancient arm of the Gulf of California from which it was cut off in recent times by the building of the extensive Colorado River delta. It probably has been filled and refilled much more frequently than the Salton Sea since for a long time it has had a more direct connection with the Colorado River. Records show that the lake occupied Pattie Basin six times between 1884 and 1928.

The basin is joined to the Colorado's main stream by the Rio Hardy. At times of high streamflow, such as is occurring this season, water from Rio

Hardy slips around the southern end of the Cocopahs and into the Laguna.

Rio Hardy was named after Lt. R. W. H. Hardy of the British Navy, who in 1827 made the earliest examination of the mouth of the River and charted the estuary and gulf. At the time of his visit, "Hardy's Colorado" carried the entire volume of the Colorado. Only a few years later the tumultuous stream changed course and discharged through a channel far to the east.

There is an old road along the full length of the dry lake bed. Once it was much used by smugglers, but today most of its traffic is by wood cutters entering the ironwood and palo verde tree thickets on the western borders of the Laguna. They sell their loads of fuel to the poorer folks of Mexicali who still rely on wood for cooking and warmth.

A number of sinuous branch roads lead into several of the picturesque canyons which gash the eastern face of the Sierra Juarez. Among these, perhaps the best known is beautiful Guadalupe Canyon, with its groves of Washingtonia and blue palms, and hot springs.

I seldom pass over the Laguna roads

without meeting several of these wood cutters in battered trucks loaded high with cords of hard and heavy wood. Often I stop and chat, for generally they are friendly men full of smiles and jollity. They often give me quite valuable information about the country, and sometimes bits of interesting Nature lore as well.

If the day is sunny I never fail to see numbers of intricate, mysterious and beautiful mirages on the flat Laguna floor, especially when traveling southward. The strangeness of some of these distortions caused by the rising waves of heated air, are an ever recurring wonder to me. I may see well-formed trees ahead, apparently 10 to 15 feet high, but when I get to where they ought to be, there are only small bushes a foot or two high. An old tire or automobile part rejected by some luckless traveler may loom in the distance as large as a vehicle.

When dry, the level gray mud-cracked rubbery-to-hard playa surface offers a good foundation for high speed travel. But with a little rain or when a thin flat sheet of water accumulates from a cloudburst, this surface becomes an impassable quagmire,

"slick as gravy or the eel of proverb." In many places I have seen evidence where cars or trucks have sunk deeply into the soft mud, floundered and skidded sideways as the drivers attempted to extricate them from soft spots.

The Laguna Salada is what geographers call a wet-type dry lake. Although the surface may appear quite dry, there always is wet rubbery-textured salt-impregnated earth beneath. On the lower east side of the playa are several perennial seepages of water surrounded by white salt encrustations on which growths of salt cedar, sedge and saltbush occur. One of these, about midway down the length of the playa, is a hot spring with water temperature between 112 and 128 degrees

From the surrounding area great numbers of half-starved coyotes come in to partake of the feast. For them it is a time of bounteous eating.

I am always amazed to find numbers of small birds flying about or running on the surface of the level plantless clay bottoms — killdeer, flocks of horned larks and occasionally sparrows. What attraction this place has for them I cannot imagine.

Vegetation zones mark the various more or less permanent water levels of the past. A margin of mesquite a quarter to a half mile wide occurring on the sand hummocks, indicates the highest levels the water ever reached. Inside this is a much narrower belt of salt bushes and mallows, indicating lower levels. Below this zone grows a

ground. It is still traveled by Mexican cattlemen. This route often was used by Indians of the Colorado delta region. They first went over a low pass in the Cocopah Range to Agua de las Mujeres (Women's Springs), a not-too-good but dependable seep. From there they headed southwest into Palomar Canyon.

It was along this trail in the spring of 1828 that the intrepid frontier trapper and tradesman, James Ohio Pattie, his father Sylvester, several companions, and two Indian guides, passed on their way to the Spanish settlements on the Pacific Coast. After much suffering from thirst, they reached Santa Catarina Mission where they were taken prisoners and sent to San Diego. In commemoration of the brave trek of these first Americans to reach the Colorado River Delta overland, and their strenuous journey across the Laguna Salada trough, Dr. T. D. McDougal of the Carnegie Institution designated it the Pattie Basin. The ancient lake represented by the highest of the old strand lines was named Lake Pattie by Carl L. Hubbs and Robert L. Miller, who wrote the first adequate account of the fish history of the western United States and northern Mexican desert basins.

A second intertribal trail to the Sierra Juarez began at the delta of the Colorado, ascended over a southern spur of the Cocopah Mountains to Pozo Coyote, an unfailling but not always drinkable supply of water. From here the trail cut across the barren, waterless and flat plain of Pattie Basin to Tinaja Altas, or directly up a wide wash to the southeast known as Arroyo Grande where a dependable supply of water is found. It is a route still followed occasionally because it "affords the easiest grades from the backbone of the peninsula to the Colorado River and is composed of short tangents from water to water."

There is reason to believe that some portion of the Pattie Basin may have been viewed by Father Kino 200 years before the Patties saw it. Father Garcés, on his fifth visit to the Rio Colorado Delta in 1775 and 1776, probably went as far south as Montague Island near the head of the Gulf, and in so doing glimpsed the great open plain leading into the Basin. It is quite possible that he went into the Basin and saw the Laguna at a time of low water. In his diary he wrote: "Thus I perceive that at time of great risings of the river, water can very well overflow this valley—as far as the place where the first expedition (of 1774) found stranded that heap of fish of which is made mention in the diary."



Palomar Canyon. The Pattie party traveled up this canyon on its way to Santa Catarina Mission.

Fahrenheit, in which blue-green algae flourish. A small "rain water fish" of troutlike form (*Lucania brownii*) is found darting among the algal masses. An old faded road runs down the east side of the Laguna to this spring. Dr. Robert L. Miller of the University of Michigan located a population of cyprinodont minnows, common in isolated desert springs, at a pool known as Pozo del Tule on the northwestern edge of Laguna Salada.

When overflow waters of the Colorado River flood this basin, shoals of fish are brought in. As the shallow sheet of water evaporates, the salt concentration rises to the point where it becomes lethally poisonous to all fish life. Their bloated bodies float to the edge of the lake to form windrows of decaying and dried fish. The species represented are mostly carp and mullet.

marginal strip of sea purslane if soil moisture is sufficient. Here and there in isolated places are lines or clumps of salt cedar and salt-tolerant salicornia. Thickets of flowering tamarisks spring up after each flooding.

I have found many indications of temporary Indian settlements in the mesquite thickets on the playa's western edge. In some of the larger neighboring canyons are perennial streams furnishing water, and native palms, the seeds from which were food for the tribesmen.

Across the southern end of the Pattie Basin just below the Laguna, an old Indian trail leads westward up through well-watered palm-inhabited Palomar Canyon to the pinyon and yellow pine forests of the mile-high Sierra Juarez. I have hiked over much of this trail and found it in excellent condition, particularly in the higher

Adult Education for the Papagos ...

On the Papago reservation in southern Arizona Uncle Sam has opened the door to a new world of interest for the tribesmen by conducting classes in adult education. The Indians are learning reading, writing and arithmetic—and they are eager students.

By CHARLES J. HOFFMAN
Photos by Bernie Sedley

LOPEZ CARLOS is a Papago Indian who likes "arithmetic and reading." But he doesn't like double-barreled questions. I know, for I asked him one.

It was a typically hot southern Arizona day when I drove the 106 miles from Tucson to the little Indian village of Buffalohead ("Pisinemo" to the Papagos) to talk with Carlos. As we stood facing each other in the bright

desert sunlight, it soon became apparent that Lopez Carlos, like many other Indians, was reluctant to talk with a stranger. But he did know a few words of English which helped bridge the language barrier between us.

Only a handful of Papagos speak English, and I asked Carlos if he had learned it at home or in school. This was the type of double-barreled question I had been warned about. He

stood for a long time staring east to the mountains, his arms folded, his face expressionless. When I thought he had forgotten my question and was about to repeat it, he said "yes," still leaving me without an answer.

This was a start, however. Knowing he was attending adult school classes, I asked what subjects he liked best. Again came the long pause and the look to the mountains. Finally, he nodded. I asked the question again, this time slowly and with specific subjects named.

"Arithmetic," he said after a long wait, "subtracting and adding." As an afterthought he added "reading."

Carlos' reply ended the conversation about his educational pursuit. It was

Instructor Charles Weaver, a former Texas school superintendent, gives special attention to his students at the Pisinemo Village school.





School's out for the day at Pisinemo.

THE *Desert* MAGAZINE CLOSE-UPS

In June, 1954, Mrs. Elizabeth White's 30 year career of teaching Navajo and Hopi Indian children came to an end. Upon her retirement she was honored by the Department of Interior with a Certificate of Merit and a medal for commendable service.

A Hopi herself, her story, "First Day in the White Man's School," appears in this month's magazine.

"One of my greatest interests lies in furthering educational advantages for Hopi youth, and in helping parents find ways of financing college attendance for children who are ambitious to gain higher learning," wrote Mrs. White.

"Of equal interest," she added, "is my desire to preserve in print the cultural background of my people." To further this aim she is writing an autobiography as well as a book depicting the life pattern of the Hopis before the coming of the Spanish in 1540.

"I am happiest when I feel that I can bring white people and Hopis to a better understanding," Mrs. White said. Recently she gave a series of lectures in California to acquaint her audiences with the Hopi cultural background.

Mrs. White divides her time between Flagstaff and her home in Oraibi on the Hopi Reservation. Each summer she is hostess to scores of people who want to know the Hopi people better.

* * *

Charles J. Hoffman, whose article, "Adult Education for the Papagos"

appears in this month's *Desert*, joined the staff of the *Tucson Daily Citizen* in 1951. Prior to that he was a newspaperman in his native city of Grand Rapids, Michigan, a social worker in Detroit, and during the war saw service with the armed forces in Europe.

He is a 1937 graduate of the University of Notre Dame, and in 1948 received a master's degree from the University of Michigan.

The Hoffmans have two children, one a little boy from Germany they recently adopted.

* * *

"Saga of Death Valley's Jimmy Day-ton" was written by a Midland, Texas, resident, Audrey Walls Lloyd. She recently completed research for *City on Stilts*, the story of Galveston, Texas, rebuilding after the 1900 storm, soon to be published in book form. Mrs. Lloyd also is working on a small book, *The Talking Leaf*, which deals with Sequoyah, inventor of the Cherokee alphabet.

In addition to writing and book review work; painting and cooking hobbies occupy her time.

* * *

Born in the Deep South, but a Winslow, Arizona, resident since 1924, Effie Breland Day, author of this month's "Lavender from an Arizona Garden," has three hobbies: gardening; studying wildlife; and raising pet hens. Her stories and articles have appeared in 21 different magazines, and she is the author of two books. Trained as a teacher, most of her writings are for young people.

Mrs. Day's husband has retired from the Santa Fe Railway Civil Engineering Department, and together they are busy planning a new desert home.

typical of members of his tribe who never answer a question without first thinking it through very carefully.

For Carlos, who is a bus driver on the Indian reservation, the desire for education is genuine. Now 47, married and the father of three children the eldest of whom recently entered the first grade, he is trying to pick up where he left off 39 years ago when he completed the third grade.

Despite his language problem and a way of life and tribal customs that go back more than 5000 years, Carlos is grasping at this chance to return to school. His wife, Helen, also attends classes, and she, like other members of her tribe who want to learn more about the white man's ways, goes about the laborious task of learning to write her name, to read and speak, and to understand simple words such as apple, dog and cat.

Carlos was born in Pisinemo in 1910. Merely struggling for an existence in his desert village is not enough for him and many other Papago Indians. In addition to the basic wish for happiness for himself and his family, and an opportunity to continue living in his native village, Carlos and his tribal brothers want to know and understand present day happenings; and, most of all, they want to be able to write their own names and to read. To do this they are willing to go to school despite their ages and the sacrifices it entails.

Through the efforts of Edward B. Turner, head of the adult education program on the Sells Indian Reservation, their want is being met. Pisinemo, which consists of some 40 families, is one of nine villages on the sprawling 3,000,000-acre reservation where the Indians have adult school sessions.

The program, started in March, 1956, is the only one of its kind in Arizona, and one of five such pilot projects in the United States. Nearly 180 Papagos ranging from 30 to 70 years of age, participate. The smallest class group has seven students, the largest 28. The 15-student class average permits the instructor to give much personal attention to the pupils.

At present it is purely a literacy program aimed at teaching the Indians to read, write and speak English so they can carry on everyday business affairs.

Of the entire group, only seven Papagos have had schooling equivalent to that of the eighth grade. These students are given more advanced courses in budgeting, citizenship, first aid, politics, safe driving and Southwest Indian history.

The great majority who have had no formal education concentrate on the fundamentals of reading and writ-

ing. Already some of the older Indians who have had no prior schooling have learned to write their names. Many of these receive old age assistance, and now one of their biggest thrills comes from endorsing monthly allotment checks with their signatures instead of by the previous method of an inked thumbprint.

The program has not been forced on the Papagos. They adopted it of their own choice. Interest was spread throughout the reservation by word of mouth. The program first was explained to each village chief. If he liked the idea he talked it over with his people. If they, in turn, expressed an interest, the chief sent for Turner who discussed the program further with the village members, found out what particular interests they had, and then—if they so desired—set up the adult education classes.

The two-hour instruction periods are held daily Monday through Thursday. They are taught in English, but because the Indians for the most part only understand their native tongue, the lessons are translated by interpreters known as instructional aides. Once understanding the English words and their meaning, the students repeat them aloud. All of these instructional periods are arranged at the convenience of the Indians, some classes even being held in the evening.

With no regular classrooms available, the Indians receive instruction in churches, recreational centers, govern-



Lopez Carlos studies his Weekly Reader while waiting for classes to begin.

ment school buildings and private homes.

Their textbooks consist of 30 booklets written especially for them, and filled with simple drawings which illustrate the meanings of English words. These vocabulary primers cover the

subjects which most directly affect the lives of the tribesmen, such as personal hygiene, farming, family life and health. In addition to textbooks, visual aids and tape recorders are used in the classrooms.

The Papagos were chosen to participate in this program because culturally they are the least advanced of all Indian tribes, and therefore their need is greatest. Enthusiasm of those enrolled in the program runs high, and class attendance is regular. Only at roundup or fiesta time are there many absences.

Although adult education is a government project sponsored by the Bureau of Indian Affairs, it is operated locally by the Papago Agency. The present program costs \$40,000 annually, which includes outlay for transportation, equipment, and teacher and instructional aide salaries.

Besides Pisinemo, adult education classes are held at Santa Cruz, Kerwo, Vaya Chin, Chuichu, Santa Rosa, Covered Wells, Cobabi and San Simon.

The program operates the year around, and is geared to meet the basic needs of the Papagos who have long been separated from the facilities and opportunities of modern life. And the Indians, like Carlos, when asked if they are for or against the white man's schooling, reply with a direct and simple, "yes."

Mrs. Helen Carlos, left, and Mrs. Josephine Garcia receive help from instructional aide Mrs. Malinda Ortega, standing.



Lavender from an Arizona Garden . . .

By MRS. EFFIE BRELAND DAY

FOR THE PAST 30 years desert gardening has been by hobby, and it was a lucky day when a friend handed me a small lavender plant with the challenge: "See if you can make this grow!"

Without preparing the ground, I transplanted the lavender in one corner of my Winslow, Arizona, flower bed—ordinary sandy desert soil with traces of adobe and a light mulching of barnyard fertilizer from previous plantings. The job was completed in minutes.

During the next few days I kept the plant well watered until it showed signs of life, after which I watered it only once a day.

By the fall of that year my lavender had put out runners and spread over a square-yard of the bed area. But winter cold halted the plant's progress, and when spring came and it again was time to prepare my garden for new plantings, I attacked the lavender patch with a hoe.

As I cleared away the parts of the plant which had been killed by frost, I noticed evidence of new growth on the underlimbs. Carefully I cut all the dry parts away, examined the plant even more closely, and decided to wait a week or so for new developments.

By early March new young leaves covered nearly all of the dark bare runners, and in June I had a lavender bed in full bloom.

The rich sweet odor of lavender filled the yard when the slightest breeze stirred, or when my dress brushed against the plants. I picked some of the flowers and rolled them into little balls. These I placed in a jar.

By late September the lavender again was in bloom. I harvested the blossoms and added the rolled balls to my jar. And this time I cut and dried the fragrant green stems and leaves, and later sewed them into sachet bags. In November I had still another lavender harvest!

Three years ago my success with lavender prompted me to enter a park-naming contest. My entry, "Lavender Gardens," won, and soon I began receiving letters from people in other states who had heard of the proposed park and were curious to



Six-week old lavender in the author's garden. At nine weeks the plants will be in bloom and as tall as the regal lily growing in the center of the bed. Despite its proximity to the heat-retaining concrete walk and steps, lavender remains straight and fresh throughout the summer.

learn what a northern Arizona housewife knew about the European mint, lavender.

Actually I am cultivating a variety of broad-leaved lavender (*Lavandula latifolia* or *spica*), also a native of southern Europe, but more tender and less fragrant than common or narrow-leaved lavender (*L. vera* or *angustifolia*) which is more extensively cultivated in the Old World for its flowers and perfume oils. Desert lavender (*Hyptis Emoryi*) is one of many indigenous Southwestern mints (among others: horsemint, paper-bag bush, chia, the various sages, thyme pennyroyal, etc.) and very sensitive to frost. It grows on the warmer portions of the desert in southeastern California and southern Arizona. The leaves, covered with scurfy hairs, give out a sweet odor that somewhat resembles the smell of turpentine. The scent is especially noticeable after a rain.

With each reply to the many inquiries I received, I enclosed a spray of desert-grown lavender. So far these letters have gone out to 20 states and Canada, and all the folks who placed my lavender in a glass of water have rooted it.

Lavender on the desert — and three harvests a year! Here is a suggestion for a lovely sweet-scented addition to the gardens of those desert dwellers who wonder what will grow best in the sandy soil of their dooryards.

Now the mail brings such reports as: "my lavender has been transplanted in a pot," or "my lavender is growing in the yard and is in bloom." The friendships I have gained through the distribution of lavender are priceless.

My experiments with this plant have led to the cultivation of many others. I have had much success with many native species which grow in this dry miraculous climate. These plants have acquired through adaptation great preservative powers, and can be rooted from mere stems after being kept out of water for considerably long periods of time.

Recently I shipped dry lavender leaves and stem to the members of a Friend In Need Club in Ohio. They made lavender sachet bags and sold them at the county fair to help finance their charitable work. I also mailed boxes of dry lavender to shut-ins who made sachet bag holiday gifts for their friends.

Thus have I been able to share with others throughout the land the joy derived from my Arizona-grown lavender.

Here and There on the Desert...

ARIZONA

Petrified Forest Park Status . . .

HOLBROOK — The President signed enabling legislation which will make it possible for Petrified Forest National Monument to gain National Park status. Actual date of the change-over is dependent on when state and privately-owned lands within the Monument boundaries can be purchased by the Federal government. Negotiations were underway for the 6960 acres needed to consolidate the park holdings.—*Holbrook Tribune-News*

Public Land Auctions Sought . . .

WASHINGTON, D. C. — Arizona Senator Goldwater has proposed public auctions of Federal land in the Western states in order to increase private ownership of property. He pointed out that the Federal government now owns 78 percent of the total area of Arizona, and said more land is coming under Federal ownership as the result of exchanges of large private tracts for smaller, or more valuable Federal tracts. "Recent speculation in desert land for farming, residential and industrial uses has shown certain inequities in our present law that should be corrected," Goldwater declared.—*Phoenix Gazette*

15 Years to Build Telescope . . .

TUCSON—The projected 500-inch telescope for the National Observatory in southern Arizona will take 15 years and \$40,000,000 to complete. Laboratory Director Aden B. Meinel said the giant telescope project is now "in the conception stage," but could be started "at a moment's notice." Ground will be broken near Tucson by mid-summer for a \$3,100,000 observatory project, with two 16-inch scopes, plus 36 and 84-inch telescopes later, Meinel announced.—*Phoenix Gazette*

Page Cost Set at \$21,000,000 . . .

PAGE — The Glen Canyon Dam project community of Page will cost close to \$21,000,000 to construct, the Bureau of Reclamation estimated. Major items include: permanent housing, \$7,980,000; temporary housing, \$4,289,000; streets and sidewalks, \$2,637,000; water supply system, \$1,283,000; administration building, \$726,000; and warehouse, \$566,000. —*Arizona News*

New Border Station at Parker . . .

PARKER—A new border inspection station recently was opened at Parker, a half mile from the Arizona-California border. The modern 20x28

foot structure replaces an antiquated 8x10 foot building in use for many years.

Dam Claims Fourth Victim . . .

PAGE—The death toll rose to four on the Glen Canyon Dam project when a construction worker was killed by a falling rock 1000 feet inside a water diversion tunnel. A second worker was hospitalized after being struck by the same rock.—*Phoenix Gazette*

CALIFORNIA

Sheep Grazing Solution Asked . . .

MOJAVE — Community organizations in Mojave, Ridgecrest, Boron and Barstow have asked government agencies to curb sheep grazing in the desert area. Protests arose when this year's bountiful wildflower crop was ruined in many areas by sheep. Kern County's planning commission is studying a petition by Mojave residents to create a closed grazing area with a radius of eight miles around the community.—*Boron Enterprise*

Billboard Law Passed . . .

SAN BERNARDINO — Billboard control legislation was enacted by the San Bernardino Board of Supervisors. The measure is designed to limit the type, size and location of outdoor advertising signs along freeways in the county. A state law, also regulating outdoor advertising, is limited to controls along landscaped freeways. The county will permit outdoor advertising signs of any kind within 500 feet of both sides of an existing business or commercial structure that is located within 125 feet of a freeway.—*Barstow Printer-Review*

Land Added to Anza-Borrego Park

BORREGO SPRINGS — The San Diego County Board of Supervisors decided to sell 7357 acres of privately owned tax delinquent land within the boundaries of the Anza-Borrego Desert State Park to the State. The county decision was protested by the San Diego Cattlemen's Association and the County Tax Collector. The tax delinquent land and other privately owned lands are needed for development of a "great desert park," a State Beach and Parks Commission spokesman declared.—*Los Angeles Times*

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"SOLO BELOW"—An 80-page book about a one-man trip through Baja California. Learn what kind of equipment needed—the best fishing spots—where to obtain gas and water, etc., \$1.00 postpaid. Dept. "D," AAA Publishing Company, 345 "I" Street, San Bernardino, California.

TRUE OR FALSE ANSWERS

Questions are on page 18

- 1—False. The tarantula is comparatively harmless.
- 2—False. A mesquite pit was for roasting the buds of mesquite or agave.
- 3—True.
- 4—False. Religious custom requires the Navajo hogan to open to the east.
- 5—False. The Colorado Desert is in Southern California.
- 6—False. The Hopi Indians make piki.
- 7—True.
- 8—False. Father Escalante was exploring Utah about the same time De Anza was trekking to Monterey.
- 9—True. 10—True. 11—True.
- 12—False. Ocotillo is of the genus *Fouquieria*.
- 13—True.
- 14—False. The blossom of agave is yellow.
- 15—False. Except in rare instances, no one has yet deciphered the petroglyphs found on the rocks.
- 16—True. 17—True.
- 18—False. Solid ironwood will sink in water.
- 19—False. You would pass through Oak Creek Canyon.
- 20—True.

BARRY STORM—famed writer-publisher-explorer "Thunder God's Gold," "Practical Prospecting," "Tales of the Southwest," (see cardex files most libraries), now has ready for publication:

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MISCELLANEOUS

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Alabama Hills Park Opposed . . .

LONE PINE—The Alabama Hills Association went on record against the proposed formation of a state park in the Alabamas. The action came at the group's organizational meeting. The Association members voted in favor of promoting tourist business and increasing camping facilities in the Alabama Hills, but in voting against the state park idea they stressed their opposition to the possibility of residents being forced from their homes to make way for the park project.—*Inyo Independent*

Cibola Bridge Modified . . .

CIBOLA—Two spans were removed from the controversial Cibola Bridge 20 miles south of Blythe, to provide a 20-foot-wide passageway. A temporary hinged span over the opening to allow continued use of the structure pending possible approval of permanent modifications, was expected to be in operation. The bridge was built last year by a group of farmers without approval of the U.S. Corps of Engineers.—*Palo Verde Valley Times*

Sheepmen Need Herders . . .

FRESNO—Western sheepmen told a Congressional investigating committee that Basque herders should be permitted to stay in this country at least five or six years. Few Americans are interested in the hard work and long periods of loneliness a shepherd must put up with. The Basques at present can come to the United States only in limited quotas and they can stay but three years in most cases.—*Phoenix Gazette*

Wildlife Preserve Planned . . .

BLYTHER—Plans to withdraw 44,685 acres of public land in eastern Imperial County along the Colorado River were announced by the Bureau of Land Management. The land is to be used for a wildlife preserve.—*Imperial Valley Weekly*

NEVADA

Burros Given Protection . . .

HAWTHORNE—The Mineral County Sheriff was directed by the County Commissioners to extend protection to all wild burros and mus-

tangs, in order to assure the conservation of these creatures. The action followed the Commissioners' denial of two applications to round up and brand wild burros in the county. The Commissioners' decision was a victory for William J. Ford, resident of Tonopah Junction, who vigorously opposed the granting of the burro permits.—*Mineral County Independent*

Pyramid Lake Gets Water . . .

PYRAMID LAKE—About three-fourths of the water flowing through Reno in the Truckee River is making its way to Pyramid Lake. This report was hailed by conservationists, for the receding lake appears to be doomed by upstream irrigation projects.—*Nevada State Journal*

Proposed Park Study Asked . . .

WASHINGTON, D. C.—Legislation has been introduced which provides for the Secretary of the Interior to investigate and report to Congress the advisability of establishing a national park in the Wheeler Peak-Lehman Caves area of the Snake Range in eastern Nevada. Investigation is to include findings on: national importance of the proposed park; advisability of authorizing livestock grazing, mining and hunting and fishing within the park area; and estimated total cost of establishing such a park.

Hoover Dam Plaque Unveiled . . .

HOOVER DAM—Unveiling of the American Society of Civil Engineers' "Seven Wonders of America" plaque took place at Hoover Dam in mid-April. The ceremony was accompanied by a reunion of engineers, "construction stiffs," and others who took part in the building of the dam. Started in 1931, Hoover Dam was completed in 1936.—*Yuma Sun*

Range Condition Good . . .

CARSON CITY—Nevada range feed condition is 80 percent of the long-range normal—but seven percent better than the average for the past 10 years. Cattle condition is 84 percent of normal—four percent better than at the same time last year; and sheep condition also is 84 percent of normal, unchanged from last year.—*Wells Progress*

Recreation Plans Outlined . . .

RYE PATCH DAM—Plans for the construction of a boat dock for fishermen and water skiers, a beach for swimming and sun bathing, and picnic facilities recently were disclosed for Rye Patch Dam. The dam is in the Winnemucca-Lovelock area. Work on a road to the proposed dock site already is underway.—*Humboldt Star*

NEW MEXICO

Road May Open Gila Area . . .

SILVER CITY—An anticipated speed-up in forest road work as an anti-recession step may lead to the construction of a road into the heart of the vast Gila Wilderness Area in southwest New Mexico. At present, a conventional car can travel from Silver City to within 19 miles of the Gila Cliff Dwellings National Monument. From there, in good weather, jeeps can negotiate the trail all the way to the monument. It is this stretch which some Silver City people have long advocated being built into a road.—*Graham County Guardian*

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Historic Site To Be Studied . . .

LAS CRUCES—The National Park Service's survey of historic sites and buildings will include the historic period and events associated with Old Mesilla. Last July Las Cruces city officials asked the Park Service to consider designating Old Mesilla as a national historical site. Mesilla Plaza was made a state monument in September.—*Las Cruces Citizen*

Kiva Restoration Scheduled . . .

ESPANOLA—Santa Clara Pueblo Indians plan to excavate and restore a kiva at the abandoned prehistoric cliff city of Puye. The ruins, protected by the Indians for years, are an important and fascinating archeological site. The 20-foot-in-diameter circular sunken kiva will be roofed, and visitors will make the descent to its floor by means of the traditional ladder. The restored kiva will be open to the general public.—*Grants Beacon*

Archeologists Busy at Dam Site . . .

NAVAJO DAM SITE—The New Mexico Laboratory of Anthropology, working with several other agencies, is gathering archeological information in the northern New Mexico areas

destined to become inundated by the proposed Navajo Dam reservoir or related irrigation canals. So far, the scientists have found evidence that man has been in the area since 1850 B.C. The region behind the dam site was classified as an "important archeological area," holding clues to the history of the Southwest.—*New Mexican*

UTAH

Scientists Visit Glen Canyon . . .

GLEN CANYON—University of Utah anthropologists made a 150-mile boat trip down the Colorado River as part of a long-range project to salvage remains of prehistoric dwellers from the area that eventually will be submerged by waters of Glen Canyon Dam. Purpose of the trip was to pick several sites for excavation this summer. These will be selected from nearly 50 promising locations staked out by survey parties last year. Four salvage crews will then dig into these cliff dwellings during the summer.—*Salt Lake Tribune*

L.D.S. Membership Rises . . .

SALT LAKE CITY—A membership increase of 71,583 during 1957 was reported by the Church of Jesus

Christ of Latter-day Saints. The report, read at the 128th annual church conference in April, showed a total church membership as of December 31, 1957, of 1,488,314. The church expenditures totaled \$58,145,863 during the year—\$12,100,000 for missions and missionary work; \$21,600,000 ward and stake buildings and activities; \$2,200,000 construction and operation of temples; \$10,400,000 church schools; \$6,200,000 welfare; \$1,500,000 Genealogical Society; \$2,000,000 general administration.—*Salt Lake Tribune*

Poison Weed Kills Sheep . . .

DELTA—Over 200 sheep were dead from eating halogeton, a poisonous weed which has spread through the area in abundance. The losses were sustained by a herd moving to the shearing grounds behind another herd. The lead animals had eaten or trampled most of the good feed, and the sheep following turned to the halogeton. Only hungry sheep will eat the weed.—*Millard County Chronicle*

Flaming Gorge Dam Start Seen . . .

FLAMING GORGE—Awarding of the contract for the construction of Flaming Gorge Dam is anticipated by June 30. The Senate has requested that the unobligated balance of funds already appropriated for the Flaming Gorge unit of the Upper Colorado River Project be used to let the prime contract for the dam during the present fiscal year.—*Green River Star*

Picture-of-the-Month Contest...

The high desert vacation season begins in June, and for the photographer—amateur or professional—this means capturing on film the record of an open land bathed in bright sunshine and long shadows, Indian ceremonials, wildlife, and outdoor fun. An excellent outlet for the best of your work is Desert Magazine's monthly photo contest. Only requirement for subject matter is that your pictures be of the desert.

Entries for the June contest must be sent to the Desert Magazine office, Palm Desert, California, and postmarked not later than June 18. Winning prints will appear in the August issue. Pictures which arrive too late for one contest are held over for the next month. First prize is \$10; second prize \$5. For non-winning pictures accepted for publication \$3 each will be paid.

HERE ARE THE RULES

- 1—Prints must be black and white, 5x7 or larger, on glossy paper.
- 2—Each photograph submitted should be fully labeled as to subject, time and place. Also technical data: camera, shutter speed, hour of day, etc.
- 3—PRINTS WILL BE RETURNED WHEN RETURN POSTAGE IS ENCLOSED.
- 4—Entries must be in the Desert Magazine office by the 20th of the contest month.
- 5—Contests are open to both amateur and professional photographers. Desert Magazine requires first publication rights only of prize winning pictures.
- 6—Time and place of photograph are immaterial, except that it must be from the desert Southwest.
- 7—Judges will be selected from Desert's editorial staff, and awards will be made immediately after the close of the contest each month.

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MINES and MINING

Window Rock, Arizona . . .

The Navajo Tribal Council rejected 26 offers from oil companies to lease its lands in Utah and Arizona. Sixteen other bids made during bonus sales of drilling rights during January and February also were pending for possible rejection. Total area involved in the 26 rejected offers was 57,515 acres, and bonus money to be returned to the oil firms as not being sufficiently high amounted to \$949,402. Mohawk Petroleum Co., one of the firms involved, protested the rejection as "arbitrary and unfair." A Mohawk official asked the council if the bid would have been rejected if a dry hole—instead of a producing well—had been drilled in the tract offsetting the one Mohawk bid on.—*Salt Lake Tribune*

Clarkdale, Arizona . . .

The American Cement Company of Los Angeles was awarded a contract for 3,000,000 barrels of Portland cement to build Glen Canyon Dam on the Colorado River in northern Arizona. American Cement's low bid was for \$9,741,000 or \$3.2473 a barrel. The Los Angeles firm proposes to supply the cement from a new mill to be constructed at Clarkdale. Meanwhile, the company announced that its subsidiary, Riverside Cement Company, has begun a \$5,800,000 crushing and storage system at its Oro Grande, California, plant. The new system will replace present facilities which were termed inadequate.

Tonopah, Nevada . . .

Treatment of ore at the Silver Peak Mill is underway, the United States Mining and Milling Corporation said. The Silver Peak Mill, formerly known as the Bruhi, is using the cyanidation process, and has complete facilities to reduce ore to the bullion state. A flotation system is being added.—*Tonopah Times-Bonanza*

Lovelock, Nevada . . .

Increased shipment of iron ore to Japan was announced by the Mineral Materials Company. Five thousand tons—or 100 carlots—are going to the Port of Stockton weekly for transportation overseas.—*Lovelock Review-Miner*

San Juan County, Utah . . .

Texas-Zinc Minerals Corporation reported 750,000 yards of overburden has been removed from the Happy Jack Mine in White Canyon, San Juan County. The Property is now fully prepared for mining of the uranium ore by the open pit method. Ore from the mine will be loaded onto trucks and hauled 72 miles to the Texas-Zinc uranium mill at Mexican Hat.—*Salt Lake Tribune*

Salt Lake City . . .

The place to look for economically valuable nonferrous metals or mineralized areas in Utah is within two miles of intrusive aphanitic porphyry of intermediate-to-acid composition. This is the finding of Prof. Bronson Stringham, head of the University of Utah's Department of Mineralogy, who has been conducting research into the development of a practical guide to greatly narrow the target area in the search for gold, silver, lead, zinc, copper, mercury, uranium and molybdenum deposits. Stringham's theory, developed on statistical evidence, should be accurate in about 86 percent of the cases where such porphyry "plugs" come to the surface, he estimated.

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Rochester Mining District, Nevada

Metals Exploration Company has begun taking out cinnabar ore from the Simpson and Stackhouse Mine in Dry Gulch. The mine is in the Rochester District on the opposite side of the Humboldt Range from the famous silver camp. The project is described as exploratory. — *Lovelock Review-Miner*

Four Corners Area . . .

The U.S. Public Health Service is conducting studies to determine whether the uranium mining industry is discharging dangerous amounts of radioactive wastes into western streams. The investigation is being concentrated in the Four Corners Area



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where New Mexico, Colorado, Arizona and Utah meet. Radioactive wastes are discharged in water which is used in the "wet flow" method of extracting uranium in which water is used to turn uranium into soluble form. — *New Mexican*

Washington, D. C. . . .

A simple and accurate method of using X-ray equipment to analyze rare earth ores and metals was disclosed by the Bureau of Mines. The new technique makes it possible to analyze 40 samples for seven elements in one day, compared with the old method which allowed the analysis of a dozen samples per week. High-energy X-rays cause the atoms of the rare earth samples to re-emit fluorescent X-rays which are characteristic of the elements in the sample.

Washington, D. C. . . .

The AEC announced a program of increased uranium purchasing, but repeated its past warning to the industry against over-expansion of uranium production facilities. The AEC said the limited expansion of uranium purchasing will provide an additional market for ore reserves developed prior to November 1, 1957. — *Humboldt Star*

Vernal, Utah . . .

A multi-million dollar research laboratory to find economical ways of extracting liquids from oil shale beds of Utah and Colorado will be built in Salt Lake City by The Texas Company. Texaco holds vast acreages of oil shale land in the Piceance Creek area of Colorado. Other oil companies, notably Union Oil Co. of California, are working on the oil shale in an effort to find a low cost way of extracting the kerogen from the shale. — *Vernal Express*

Dayton, Nevada . . .

Sierra Pacific Power Company has requested from the Bureau of Land Management a permit to prospect for coal in the area directly south of Dayton and east of Carson Valley. The utility company plans to determine if coal in the region, mined in Comstock days, could be utilized as a source of power. Modern mining techniques may make it feasible to mill the low-grade coal. — *Humboldt Star*

Salt Lake City . . .

Lisbon Uranium Corporation of Salt Lake City has delivered the richest single truck load of uranium ore in the history of the American mining industry in a bid for the Atomic Energy Commission's coveted "high grade" bonus. On the basis of preliminary assay, the ore runs nearly 22 percent U308. It was delivered on the day the 10-year-old \$10,000 AEC bonus offer expired. The high grade ore shipped in a single truck was equal in potential energy to several million tons of coal. — *Salt Lake Tribune*

Barstow, California . . .

With the first load of manganese ore from 52 miles beyond Baker arriving for processing, the historic Waterman Mill came to life. The mill is situated in the hills above Highway 466 west of Barstow. Originally, it processed silver ore mined at the Waterman Mine. — *Barstow Printer-Review*



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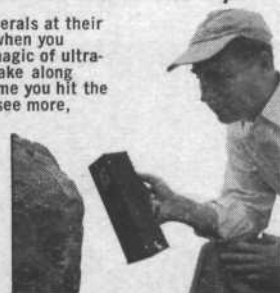
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GEMS AND MINERALS

JUNE 20, 21, 22

California Federation Plans San Bernardino 'Gem Fiesta'

Delegates, guests and show visitors will gather in San Bernardino on June 20-22 for the 19th annual convention and giant "1958 Gem and Mineral Fiesta" of the California Federation of Mineralogical Societies.

Free programs and slide showings, field trips including one to the famed Crestmore Quarry, working displays, historical collection of lapidary equipment, technique demonstrations, dealer booths, and many special displays are planned for the Orange Show Grounds event.

Show hours are 10 a.m. to 11 p.m. on Friday and Saturday, the 20th and 21st, and 10 a.m. to 8 p.m. on Sunday, the 22nd. Special recognition will be paid to Kenneth Garner on Friday and Charles Knowlton on Saturday. Sunday will be Presidents and Past Presidents (of both the Federation and the host society) Day.

Banquet tickets can be obtained from Lucile Hilbig, 1764 Garden Drive, San Bernardino. For general information contact Chairman George Nash, Rt. 1, Box 310, Redlands.

* * *

MIDWEST SOCIETIES TO MEET IN DOWNERS GROVE

A field trip to the famous Mazon Creek fossil area will highlight the June 19-22 Midwest Federation of Mineralogical and Geological Societies' convention and show at Downers Grove, Illinois. The Mazon excursion takes place on Sunday the 22nd.

The convention banquet is scheduled for Saturday evening the 21st at 6:30 p.m. Host society is the Earth Science Club of Northern Illinois.

Planned are 30 dealer booths, society and individual exhibits, free movie and color slide showings, and special exhibits. Single day admission is 50c, four day registration, \$1.25. For further information, write to 4729 Prince St., Downers Grove, Illinois.

* * *

These early summer shows also are scheduled:

May 30-June 1—Brookings, Oregon. Mt. Emily Gem and Mineral Club.

May 31-June 1—Price, Utah. Castle Valley Gem Society.

June 7-8—Grand Junction, Colorado. Gem and Mineral Club's show at Lincoln Park Auditorium.

June 14-15—Pueblo, Colorado. Santa Fe Trail Gem and Mineral Show.

June 20-22—Medford, Oregon. Roxy Ann Gem and Mineral Club's sixth annual show.

June 26-28—Kalama, Washington. Cathlapootle Gem Club and Kalama Mineralogical Society.

June 28-29—Salem, Oregon. Willamette Agate and Mineral Society's show at Keizer Auditorium.

July 4-6—Bend, Oregon. Deschutes Geology Club's second annual show.

July 19-20—Paradise, California. Gem and Mineral Club.

July 26-27—Fallon, Nevada. Lahontan Gem and Mineral Club's Third Annual Nevada Gem and Mineral Show.

July 26-27—Oceanlake, Oregon. North Lincoln Agate Society's 16th annual show.

July 26-27—Crescent City, California. Del Norte Rockhounds.

* * *

Here is an easy way to break stones to size preparatory to tumbling them. Cut slots on a trim saw about where the break is desired. These slots should be shallow on smaller rocks, deeper on larger ones. Then place a thin untempered steel chisel in the groove and strike a quick blow with a light machine hammer.—*The Voice*

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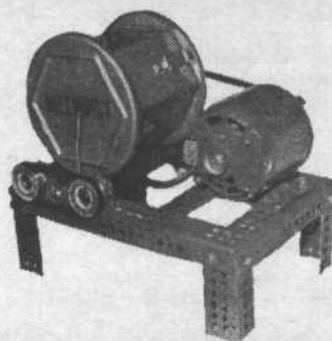
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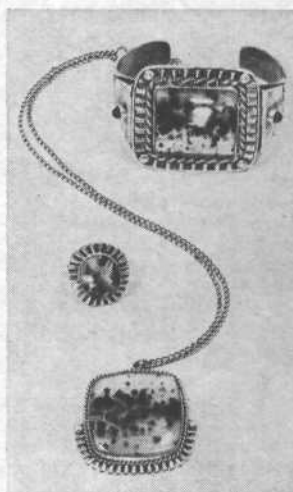
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Another way to rejuvenate sanding paper (dry) is to spray it with water and then hold a stone against it.—*Rockhound News and Views*

FEDERATION STUDIES FIELD TRIP PLEDGE

The following nine-point Field Trip Pledge is being considered for adoption by the California Federation of Gem and Mineral Societies, meeting in convention at San Bernardino June 20-22.

1. We will respect all private property and do no rock hunting without the consent of the owners.
2. We will bring to the hunting areas no firearms or blasting material.
3. We will build no fires except in designated safe places.
4. We will close all gates behind us.
5. We will not contaminate wells, creeks, or other water supplies.
6. We will leave all camping areas clear of refuse.
7. We will take no more material than we can reasonably use.
8. We will help fellow club members in case of accident, illness, car trouble, etc., on field trips.
9. We will take with our tools a large sack of friendly enthusiasm and bring home with our treasures a hoard of happy memories. — *The Crystal Ball*

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The lapidary is now using glass bottles on his rollers "so that he can see his rocks tumble."—*South Bay Agatizer* (for further information, write to Ray Fynan, 5150 W. 137th Place, Hawthorne, California.)

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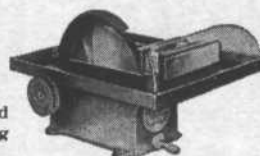
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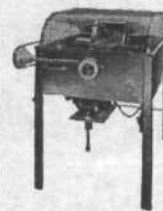


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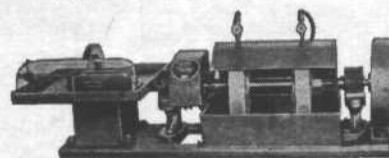
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WOOD CELLS NOT REPLACED IN PETRIFICATION PROCESS

The molecular theory on the replacement of cells by silica in solution to produce petrified wood has been repeated so often in the past that it has been accepted as fact, although it has never been supported by laboratory experiments.

Paleo-botanist Arnold of the University of Michigan could not accept this theory,

and advanced the idea that petrification is an infiltration rather than a replacement. He proceeded to substantiate this with several experiments.

Using a few small pieces of petrified wood which showed a very high degree of perfection, he placed them in hydrofluoric acid to dissolve the silica—but the wood remained intact and appeared quite soft and fragile.

Arnold then infiltrated these desilicified pieces with a colloid, and taking some very thin slices, placed them under a microscope. They revealed that there had been practically no alteration of the cell walls from the acid treatment. Had petrification been a true replacement, nothing would have remained after the acid bath.

In another experiment, a smooth surface of fossil wood was treated with acid to remove some of the mineral. Within a few minutes the acid was washed off and a colloid coating applied. When dry this was removed and a thin layer of the plant substance examined. It was composed of lignin and cellulose.—L. A. Bergen in the *Delvers Gem and Mineral Society's Delvings*

The following new officers were elected by the Riverside County, California, Chamber of Mines and Gem Society: Herman B. Richard, president; Harry Hails, vice president; Helen B. Bixel, secretary; M. C. Jones, treasurer; and Ella B. Joy, M. L. Moberly, Jack Harris, Carl Herman, Retta Ewers, Bert Albrecht and Charles G. Bixel, directors.

New officers of the Minnesota Mineral Club of St. Paul are: Carroll Kelley, president; William deNeui, vice president; Mildred Osborn, secretary; and Emil Johnson, treasurer.—*Rock Rustler's News*

Delegates from the northern California gem societies of Lakeport, Ukiah, Napa and Santa Rosa recently met to incorporate the Gem and Mineral Societies of the Redwood Empire Counties Association. The organization will hold its show on October 11-12.—*Rockhounds Bark*

Elmo Jehlen is the newly elected president of the Arkansas Gem, Mineral and Geology Society. Also elected were: J. C. Miller, vice president; Reba Talbot, second vice president; Ola Steelman, treasurer; and Dr. Frances N. Howard, secretary.—*Arkansas Rockhound News*

TESTS TO DISTINGUISH MARCASITE FROM PYRITE

Marcasite is commonly known as white pyrite. While it has the same chemical composition as pyrite, it differs in its crystal form and physical properties.

Hardness of marcasite is 6-6½ — about the same as pyrite, but its specific gravity is lower. Unless the specimen is very pure, this difference may not be easily detected, but a distinction usually can be made on the basis of color. The name "white pyrite" is given to marcasite because it is a paler yellow than pyrite on fresh surfaces—a difference that becomes quite apparent after comparing a few specimens. The material tarnishes easily, however, and the collector should make certain that the surface he is examining is a fresh one.

To chemically distinguish marcasite from pyrite, use the following test: After both minerals are finely powdered, treat with a concentrated nitric acid, first in the cold and later, after vigorous action has ceased, by warming. Most of the sulphur in pyrite will be oxidized and taken into solution as sulphuric acid. Most of the sulphur in marcasite will be separated into a free state.

Marcasite is orthorhombic, commonly in tabular crystals flattened parallel to the basal plane. It is much less common than pyrite and forms under a much narrower range of conditions. It most commonly occurs associated with galena, sphalerite, dolomite, etc. Often it forms the material in which fossils are preserved. — *The Puget Sounder*

August 14-17 dates for the El Dorado County Gem and Mineral Society Show at Placerville, California, were announced. The event will be held in conjunction with the county fair.

The El Dorado Mineral and Gem Society of Placerville, California, has changed its policy regarding collecting on the Stifle Memorial Claims. In the past a charge of \$1 per person or \$5 per club was made for collecting privileges, but the new schedule eliminates the club rate. Material limit is 25 pounds per person.

The Hiawatha, Kansas, Gem and Mineral Club was recently organized. Officers are: Mrs. Virginia Mitchell, president; Jimmy Deyoe, vice president; and Mrs. Alice Horn, secretary-treasurer.

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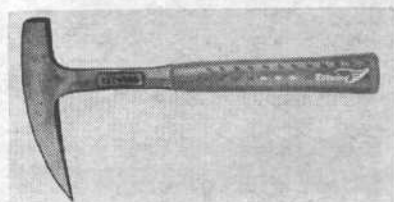
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AMATEUR GEM CUTTER

By DR. H. C. DAKE, Editor of The Mineralogist

Crocidolite (tiger's eye) is not especially difficult to polish when cut cabochon, but flat surfaces often are troublesome since the material, being fibrous, tends to "pull." In handling a flat surface be sure to get it smooth and even on the wheel, then sand with light pressure. Polish with tripoli on a rock hard felt wheel, and finish with tin oxide on a medium-hard felt wheel. The polishing of crocidolite should always be done at right angles to the fibers for best results.

In shaping turquoise, it is advisable to use only the 220 wheel, rather than the coarser one, and have the wheel running true. If a coarse grit wheel is used often it is difficult to prevent material from being ground away that is desirable to retain. The fine-grained wheels will work fast enough with so soft a gem as turquoise. Take care and time in studying turquoise while cutting; some stones look better with a small amount of matrix left in purposely, while others of a robin's egg blue and the royal blue Nevada look best without matrix. The royal blue turquoise of Nevada is slightly harder than any other type and will take an excellent final polish with tin oxide.

Some of the softer more friable chalky types of turquoise are difficult to polish properly with either tripoli or tin oxide, and a cloth or muslin wheel and red stick rouge can be used to best advantage and results on them.

Many lapidaries find that tripoli on a felt buff will give a good polish with most types of turquoise when used on a dry felt buff; that is, use the regular tripoli buff but allow it to run dry. Care must be used not to unduly heat the stone. Finish with tin oxide on a separate buff, and a higher polish can be had.

No universal technique can be given, for turquoise from different localities will vary in its hardness and compactness. Hence a little experimenting with the above methods will soon indicate the best for the type of turquoise at hand.

While a fair final polish can be had on opal by the use of a felt buff and tripoli, a much better and higher polish can be had with tin oxide used on a felt wheel. Only light pressure is needed with tin oxide to get a high gloss, which appears to give "depth" to the finished stone.

Soft gem minerals such as malachite will often give trouble if an attempt is made to polish them in the same manner that a hard mineral is finished. The cloth wheel made of muslin, with red rouge or whiting as the polishing agent, will give good results in the softer gem minerals.

In the use of polishing buffs and wheels remember not to use more than one polishing agent on a wheel, as you will get only the polish which would be given by the coarser material. Keep a separate buff for each abrasive and when not in use protect them from contamination.

* * *

Since the first appearance of synthetic gem rutile (titania) a few years past, laboratory studies have been made to produce this synthetic in a colorless form. The present material on the market has a distinct yellowish cast which detracts from the gem. This is especially notable in cut stones weighing over three or four carats.

Recently it has been announced that a "water-white" rutile has been produced. This new material is a strontium titanate, with an index of refraction and a dispersion almost the same as that of diamond. Hence the new material will compare favorably with the diamond in brilliance and fire. This synthetic gem material more closely resembles diamond than any other material yet produced by man.

Unfortunately the new strontium titanate is reported to be slightly softer than the present rutile now on the market. This will render the new material less suitable for wear as a ring stone. However, methods will no doubt be found for coating the new material with sapphire or some other hard substance to improve wearing qualities. These gem coatings are similar to those now widely used on optical lenses.

In view of the lack of hardness in the new material, it will likely find wider applications in items like brooches, where the stone will be subjected to little wear.

* * *

The cause of asterism in star sapphire and ruby is due to the symmetrical arrangement of included rutile needles which lie in the basal plane of the crystal parallel to the prism faces of the hexagon. This is the conclusion of recent work by Alice Sumner Tait.

The rutile is present as an impurity, and if not present the stone will not show asterism. This is one reason why all sapphire is not the star kind. The gem must also be more or less opaque to best bring out the six-rayed star.

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By RANDALL HENDERSON

THIS WEEK'S MAIL brought a letter from the leader of a recreational group in the Los Angeles area. The group would like to come to the desert for a camping trip—but some of the members have heard the desert is infested with rattlesnakes, and they are not sure it will be safe.

I wonder how folks get that way. My impulse was to write and tell them the rattlesnakes are so big out here they can swallow a cow, and are especially fond of tender-foot visitors.

But they were serious about it, and so I answered:

"The truth is, I have seen more rattlesnakes in one week in the hills back of Laguna Beach than in 45 years roaming the Great American Desert. I camp on the desert frequently, unroll my sleeping bag on the ground, and it has been two years since I have seen a rattler, and that was a little sidewinder so scared he ducked into a hole before I got a good look at him.

"It is my judgment that the danger from motoring on the highways is about 100 times greater than the hazard of rattlers on the desert. Actually the odds are greater than that because last year in the desert states seven persons were bitten by rattlers and only two of the victims died while something like 14,280 motor accidents were reported in the same area—218 of them fatal."

* * *

A letter from my friend Braeme E. Gigas of South Pasadena contains a paragraph which I think deserves to be passed along for the interest it will have to all desert people and travelers. Braeme wrote:

"In Arizona we particularly enjoyed . . . the Arizona-Sonora Desert Museum near Tucson. It is the cleanest, most orderly, well-designed and informatively labeled of any museum or zoo we have ever visited. It is certainly a credit to the founders and those maintaining it. It deserves wider publicity. We gathered the impression that the people in Tucson do not really know what they actually have as an asset."

* * *

One of my best friends is Leo Turner of San Diego. He is one of those friends with whom I sometimes disagree in blunt words, but when the argument is over he just grins, and we are better friends than ever. Recently Leo wrote me:

"I have been an avid reader of *Desert* for 20 years and for my money it is the best thing in print.

"But I object strenuously to Tanya South's philosophy that man is a worm in the dust, a speck on a planet which is an atom in a galaxy of solar systems.

"In all creation, Man is the Supreme idea of God—power and Perfection. By the power of thought Man creates, controls and directs the destiny of himself and all his environment. Mind is supreme and through the exercise of thought Man becomes a God in his own right.

"This old worm-of-the-dust idea is an inheritance of the superstitious dark ages and has no place in modern life."

And then I threw the book at Leo. I wrote him:

"My chief regret at the moment is that I cannot spend an evening discussing with you the subject of your recent letter.

"Actually, I don't think you and I are as far apart in our thinking as the content of your letter would indicate. In my February editorial, which you no doubt read, I said something about the 'great American sin of smugness.' If I were to take your letter at its face value I would have to classify you as Sinner No. 1 in that category.

"Of course Tanya is a poet, and it is the privilege of poets to write in allegory. But I will go along with her 100 percent in the idea she sought to convey.

"I spent yesterday afternoon planting flower seeds in my garden. I stirred the ground well, put in what I thought was the right amount of fertilizer, buried them at the proper depth and then added some water. But neither myself nor any human on earth can, by the power of thought, bring to life the tiny germ that will cause those seeds to grow and produce flowers—nor can we by thought determine the height of the flower, the number of its leaves, or the color of its blossom, or the fertility of its seeds. You and I believe in a Supreme God, because the power to give life and form and color to those seeds is vested in a Creator far greater than ourselves.

"It is true that in acquiring intelligence we humans have advanced further up the evolutionary ladder than any other form of life on this planet—we do not know about the other planets—but it is not yet known whether we will use our intellects to prolong our life and continue our climb up the ladder of evolution, or to destroy ourselves. At the present moment the odds seem to be in favor of the latter alternative.

"The legends and myths and superstitions handed down to us from the dark ages have somehow built up the idea that man really is a very important cog of the universe. I am sure we humans do have the capacity for spiritual greatness—but it appears that many of us have become so zealous in our quest for more dollars and more fun, that we have lost sight of that goal.

"What we need more than anything else, Leo, is more humility. We have the potential power to become great, and to attain a high destiny. But we are so fed with the idea that we are the chosen people of God that we may miss the boat because of our colossal egotism.

"Tanya is on the right track. We need teachers—and poets—to teach us humility. The greatest Teacher who ever walked on this earth said: 'Blessed are the meek; for they shall inherit the earth.'

"Thanks for prodding me out of my own smug little rut.—R.H."

BOOKS of the SOUTHWEST

BAJA CALIFORNIA GUIDE IS REVISED, ENLARGED

An enlarged, revised and corrected edition of Peter Gerhard and Howard E. Gulick's *The Lower California Guidebook* (reviewed *Desert*, May '57) recently was released by the publishers.

The new edition includes an improved key map and a new detail map of the route south of San Felipe, with accompanying text. Also added is a new chapter on native vegetation, and the list of fish is completely revised. For current accuracy, corrections have been made in mileages, route descriptions and other details.

This indispensable guide contains complete travel and road condition information, logged mileage of the entire trip, historical sketches, description of the land and its people, and hints on food, drink, hotels, customs regulations, currency, gasoline and automobile equipment.

Published by Arthur H. Clark Company, Glendale, California; 20 maps and key map; illustrations; bibliography; index; 220 pages; cloth bound—\$6; durable paper cover—\$5.25.

• • •

RICHARD PEARL AUTHOR OF COLORADO GEM TRAIL GUIDE

Richard M. Pearl, associate professor of geology at Colorado College and author of 12 books on gems, minerals and geology, has recently released *Colorado Gem Trails and Mineral Guide*.

This book contains: mileage logs; maps; latest information on local transportation, collecting conditions and land ownership; gem and mineral museum information; gem and mineral society information; Colorado gem production history; outline of state's geology; references for study and research.

Pearl, who has been president of the Colorado Mineral Society, Rocky

Mountain Federation and American Federation of Mineralogical Societies, is familiar with the problems of the average amateur collector and his book is written with this type of hobbyist in mind.

If you plan a collecting trip to Colorado this summer, Pearl's new book will be an invaluable aid.

Published by Sage Books, Denver; 176 pages; maps; hard cover; \$2.95.

• • •

FAMED DIAMOND HOAX VOLUME IS REPRINTED

The story of one of the world's most sensational mining frauds, *The Great Diamond Hoax*, is now available in a popularly-priced reprint edition.

First published in 1913 by Asbury Harpending in defense of his role in the swindle, the lurid tale borders on the fantastic: two rough prospectors depositing a bag of nearly worthless precious jewels, purchased in Europe, in the California Bank; William C. Ralston, president of that bank, taking the bait—hook, line and sinker; Tiffany's error in appraising the jewels;

the elaborate plans to exploit the mine; and, finally, disclosure and ruin. *Desert Magazine* of February, 1957, carried a feature article on the Diamond Hoax based in the main on the famous Harpending volume, perhaps the most authoritative record of the incident handed down.

This is more than a story about a salted diamond mine, however, for Harpending's life in California is very interesting. Leaving Kentucky as a young man, he parlayed \$5 into a fortune. During the Civil War he worked with the Southern underground and when confronted by the law, stole away to Kern County where he restored his fortune in gold mining. The reader is given revealing glimpses into the world of powerful and unscrupulous financiers throughout this book.

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